Play Intervention:

Developing advanced play skills and using play to achieve behavioral goals

Content of This Unit

- Fully Understanding and Using Sequences in Planning (Example: Cutting)
- Creating the Lower End of a Sequence (Example: Colors)
- Creating the Higher End of a Sequence (Example: Bead Stringing)
- Expanding Commercial Materials (Example: Stone Soup Story)
- Using Sequences to Teach Rote Skills (Examples: Handwriting Strokes, Spelling Words & Math Facts)
- Using Play to Target IFSP and IEP Goals (Examples: Wrist Rotation and Movement Planes)

Basic Play Intervention

Advanced Play Interventions

Final Thoughts

Basic
Play
Concepts

The basis of Developmentally Appropriate Practice (DAP) and the foundation of early childhood education is play. We understand and accept this fact, but what does this really mean in relation to techniques and environments for young learners?

The first and most important thing to understand is that "play" is not something that happens **automatically,** nor will play progress **without support** in some children. In other words, some children do not know how to play, or at least do not know how to do it very well.

This means we professionals must begin to move beyond the attitude of "preparing a lovely play environment and hoping they figure it out." We must reflect on why this generation has more toys, more educational experiences outside of school, more activities, and more hands-on learning in school, yet are still struggling, often to a greater degree, than any generation that has come before!

In this document, we will explore factors that may hinder some children from using play well. We will then explore how to fine-tune play environments for today's learners and finish by reviewing advanced techniques that use play to support the development of academics, social, and behavioral goals.

I hope the material proves useful…

Play is Neither Magical or Automatic

As mentioned in the introduction, play does not always automatically translate to skill development or understanding, and as professionals, we need to figure out why this is the case. To unravel this mystery, let's look at an experience from our own lives.

Most of us have engaged in hands-on activities using prisms and know the concepts behind them well. Light, when broken by the glass of the prism produces a rainbow…everyone know this. The reason we use this experiment in grade school is to enhance understanding of the physical concepts of light in hopes it will translate to higher levels of understanding in high school and college. So, did that occur?
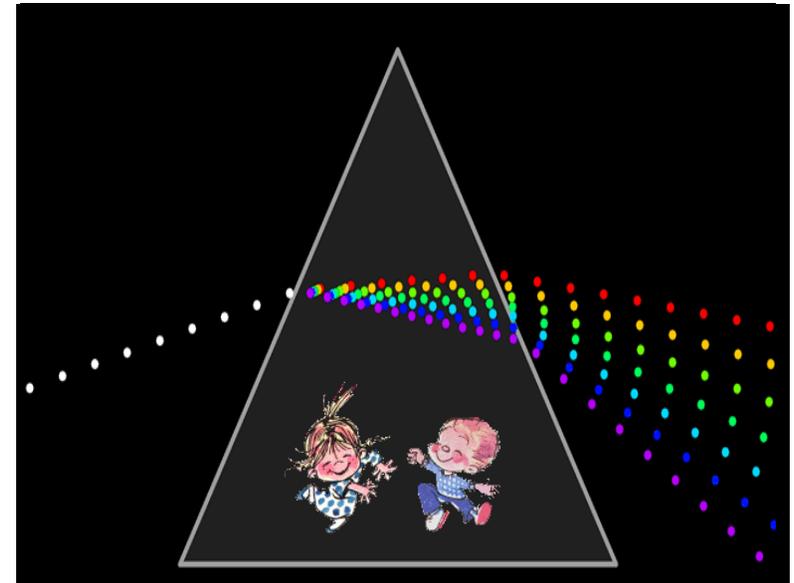
Stop and think for a minute about colors. Light contains all of the colors of the rainbow, and we can see these different colors when the light passes through a prism. In light of this hands-on experience, why do some objects then appear as the color red and others as the color blue? Why do we see these different colors?

Some of you will know this answer immediately, but others will have no clue. These people had the same hands-on experiences as children, but that physical interaction did not translate to conceptual understanding, and that is the point we MUST keep in mind when using play and hands-on experiences in our classrooms. These play activities will not magically produce understanding in all children.

In light of this reality, we must begin to explore how to make linkages for students who fail to easily gain knowledge from play-based experiences. Since skill development is not an automatic outcome of play, setting up lovely play environments or hands-on lessons is not enough. We may have to directly link the activity back to the concept for some children. In other words, we must teach <u>within the context of play</u>, a small but critical distinction.
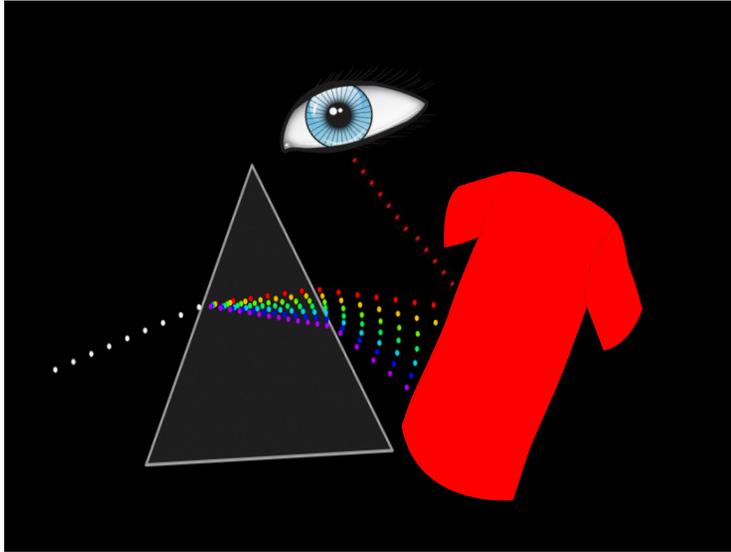
So, before we go on to deal with this concept of play, let's answer this question about colors for those of you still wondering about it ☺

White light does contain that rainbow of colors, and the prism breaks the light in such a way that we can seem them. It is like a package being unwrapped. When white light hits an object, some colors of that light rainbow will be absorbed. This means your eye will only see the colors of light that escape (bounce off). That is the nature of a dye; it absorbs certain frequencies of light. So, in simplistic language, if an object appears red, it is because the wavelength interval (or frequency interval) that is bouncing off the object falls in the red category, so that is what your eye will see, every other color has been absorbed.

Once that concept is understood, it explains many other science experiments that we run with children but may never fully link to understanding. Take for example ice cubes on different colored paper. Ice on black paper melts faster than on white paper, and children can rattle this fact off easily. This is because every color frequency of visible light is being absorbed by the black paper (thus heating it more), while the white paper reflects that same light (thus staying cooler). This is why dark clothes tend to be worn in winter (they are technically warmer), and a dark vinyl seat in a car in summer can become unbearable.
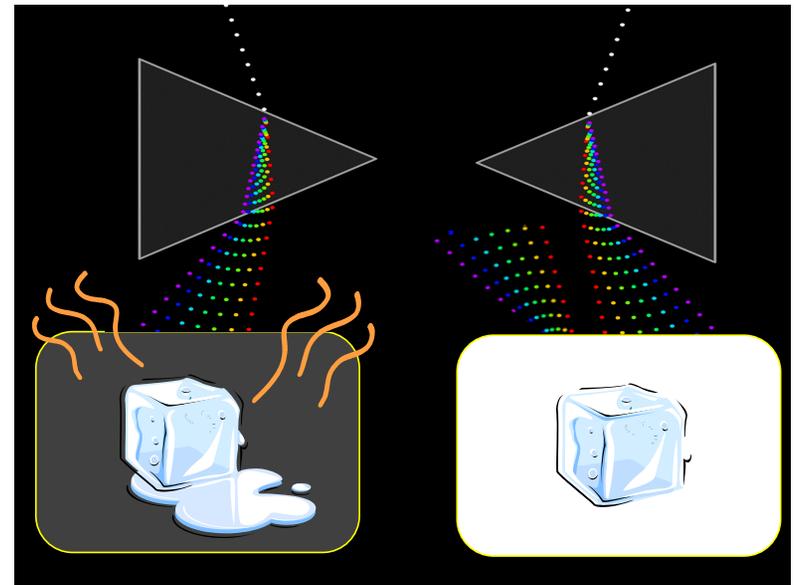
There is, of course, much more to this concept, but that is enough for our simplistic purpose. Suffice it to say that we can definitely have hands-on experiences (or play in younger grades) with minimal enhancement of knowledge. It will be our job to see where the process is falling apart. For some children, it will involve how they are using play, but for others, the problem is with the level of play itself. Let's begin by trying to discern which problem we may be facing.

Signs You May Need to Teach Play

So, how can you tell if your students can play at an appropriate level? Here are some signs that signal children are struggling with some aspect of play:

5 — Chronic behavior problems and appears to lack any play skills

4 — Repetitive play that does not have symbolic meaning (autism)

3 — Takes toys away from others and then plays with them poorly

2 — Plays for long periods but does not advance skills over time

1 — Strong play but avoids certain areas or types of play activities
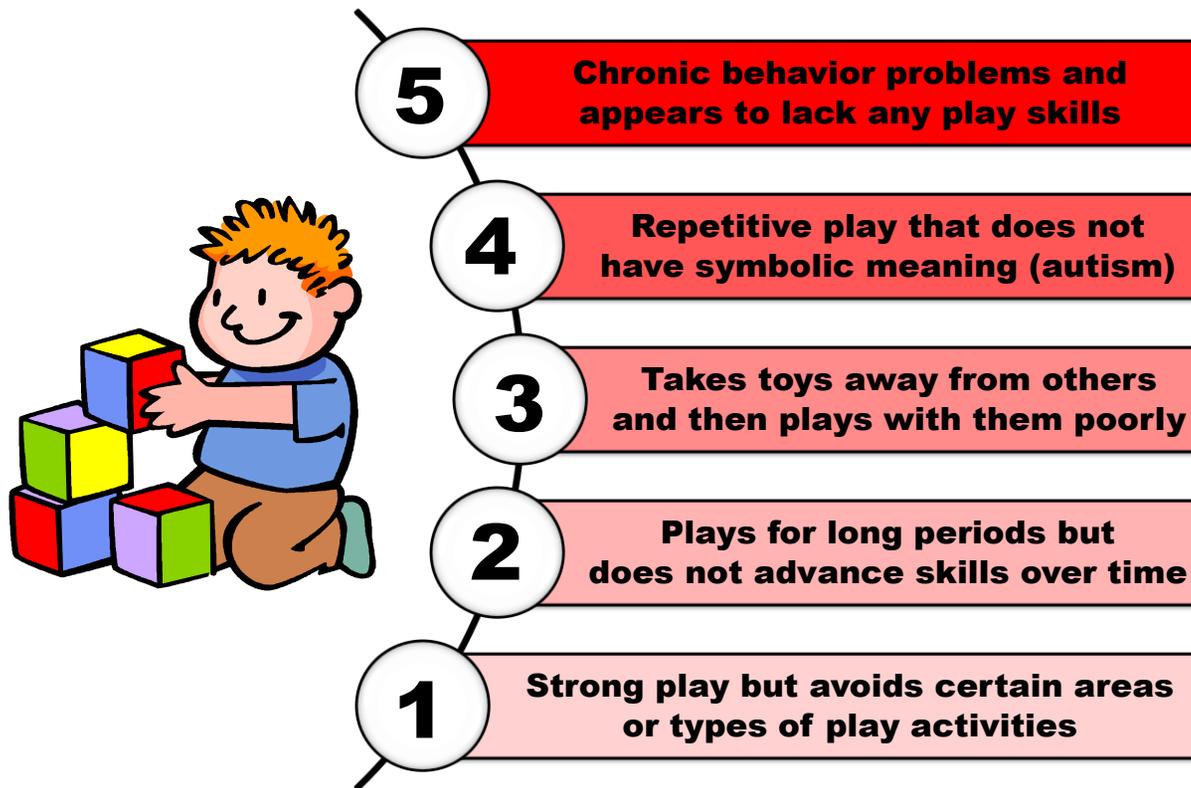
Please note that children at the lower levels of concern (#1 and 2) may not draw your attention because they make choices and play fairly well. It is important to realize, though, that *the __level__ of a child's play is as important as the length of time they play*. These children may appear to be strong players, but if you take a step back, you will see that they tend to always choose the same areas and/or have played in the same manner using the same play schemas for months. This is not a critical problem, but it is one that should be addressed in some manner. Simple environmental supports are easy to implement and will greatly enhance the progress of this group. We will cover these techniques starting on page 51.

Basics on How to Play with Children

How do you teach children through play, then? Such a simple question, but it is one that stumps many of us. We talk about how to set up environments, which toys to make available, which developmental sequences to look for, but how in the world do you <u>play</u> with children???   What should you do? Here are the general steps to get you started:

1. <u>Match the Child's Level</u>
- Imitate the actions

2. <u>Follow the Child's Lead</u>
- Change your actions as the child changes

3. <u>Establish Turn-Taking</u>
- Attempt to get the child to imitate YOU

4. <u>Introduce New Skills Over Time</u>
- Use care and introduce in developmental sequence

This type of approach ensures that you are using developmentally appropriate techniques for that child. Now, you will definitely have to use your knowledge about sequences and that child's ability to accept and respond to change when you attempt step four (we will address this more later), but overall, if you are unsure of how to play with the children in your room, this is a wonderful place to start! Now let's go a bit further…

Using the Neurological Cue Sequence

Like I mentioned earlier, we approach play as something that just happens, and that is an error. Another error we make is lumping all "hand-on" or active learning into one technique. There is a developmental sequence to hands-on activities, and the level we are using is dependent on which neurological cue is being emphasized. So, let's begin by just exploring ALL of the neurological cue **categories** in order. We will then come back and look at specific cues that can help us support play and hands-on learning.

The four categories of cues that a child will use to learn (form memory) are as follows:

A child will not need much support from adults if they are using *Cognitive Cues*. This child will cue their own actions using the knowledge and skills they already possess. At most, the adult may encourage the child to come up with a cue to use (e.g. You want to remember to glue that extra piece down? What do you think will help you remember to do that?)

The cue category that is most frequently used is *Auditory Cues*. When we use auditory cues to help children, we speak and guide them through language. Because we are such a verbal profession, we often will include auditory cues even when we are using one of the other cue categories (i.e. we will talk to the child while showing them a visual cue).

Cues

COGNITIVE CUES   AUDITORY CUES

VISUAL CUES   PHYSICAL CUES

The most interesting category to explore is *Visual Cues*. We use visual cues anytime we show a child an object, picture, etc. Since visual cue usage usually includes speaking to the child (using an auditory cue) and/or having the child <u>handle</u> the visual cue (also using a physical cue), its power may go undetected. We will explore this category further soon…

COGNITIVE CUES   AUDITORY CUES

VISUAL CUES   PHYSICAL CUES

The lowest level is the *Physical Cue* category. We use physical cues, when we have the child use their body to learn. Typically this will also involve objects (visual cues), and speaking to them (auditory cues). The important thing is to realize the child NEEDS this level. So, this type of child may need to have Velcro added to picture cues so they actually have to handle them, etc. Looking is not enough for these children!

It is clear that the general concept of "cues" is familiar to us. We know some children are self-directed learners (cognitive cues), others can pick up concepts by listening to us (auditory cues), some need to see to understand (visual cues), and still others will not truly understand until the "do it" themselves (physical cues). The main thing to realize is that we often do not use visual and physical cues to teach ALL skills. The one skill that comes most to mind is behavior. That is one skill group that we teach using a great deal of talking and little "showing and doing". We covered that problem intensely in the behavior support documents on the website, so we will leave that topic for now.

But, what about play? How does that fit in with this topic? Let's *really* explore the Visual Cue sequence in detail---that is when some critical information about play and our classrooms will come to light.

Harnessing the Power of Visual Cues

So, here are the eight levels of visual cues in order from the highest level, Symbols (closest to Auditory Cues) to the lowest level, Concrete Objects (which I obviously cannot fully show you in this document ☺).

apple			
Symbol	**Black/White**	**Silhouette**	**Colored Picture**

Photo	**Not-to-Scale Imitations**	**Real-Size Imitation**	**Concrete Object**
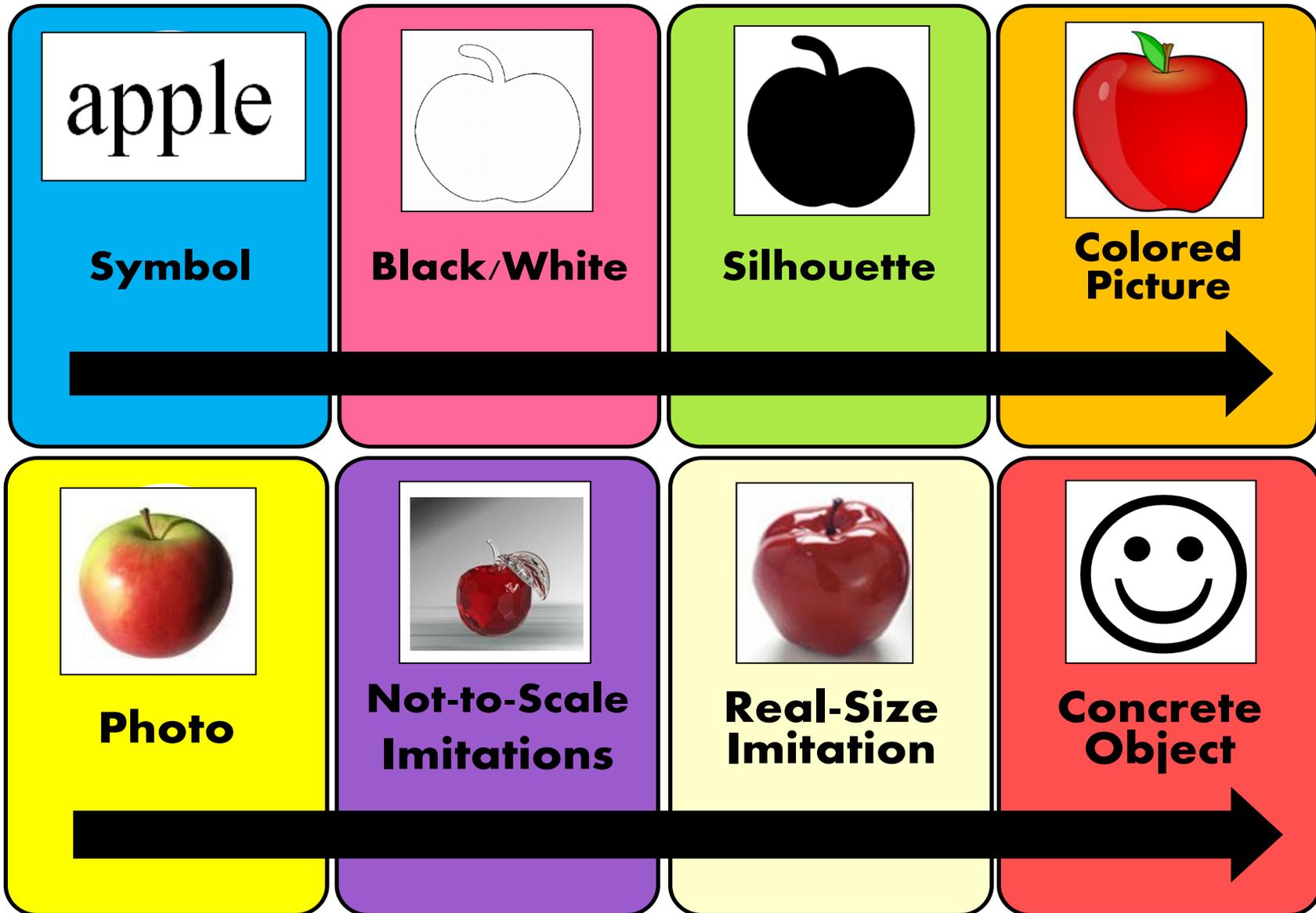
When you use the visual cue sequence to teach a skill, you do NOT have to hit every level, but it is great to understand how it all goes together so you can adjust lessons up or down, depending on the child's need. This is definitely something that can be used for any skill (including behavior) and every age, up through college-level teaching. Here is an example showing the various visual cue levels for learning to count coins:

$2¢ + 3¢ = 5¢$	¢+¢=	✗	+ =
Symbol	**Black/White**	**Silhouette**	**Colored Picture**
(use numbers)	*(use ink stamp)*	*(not useful)*	*(normal pictures)*

+ =	+ =	+ =	☺
Photo	**Not-to-Scale Imitations**	**Real-Size Imitation**	**Concrete Object**
(normal photos)	*(cheap dollar store coins)*	*(more expensive math materials)*	*(real coins)*
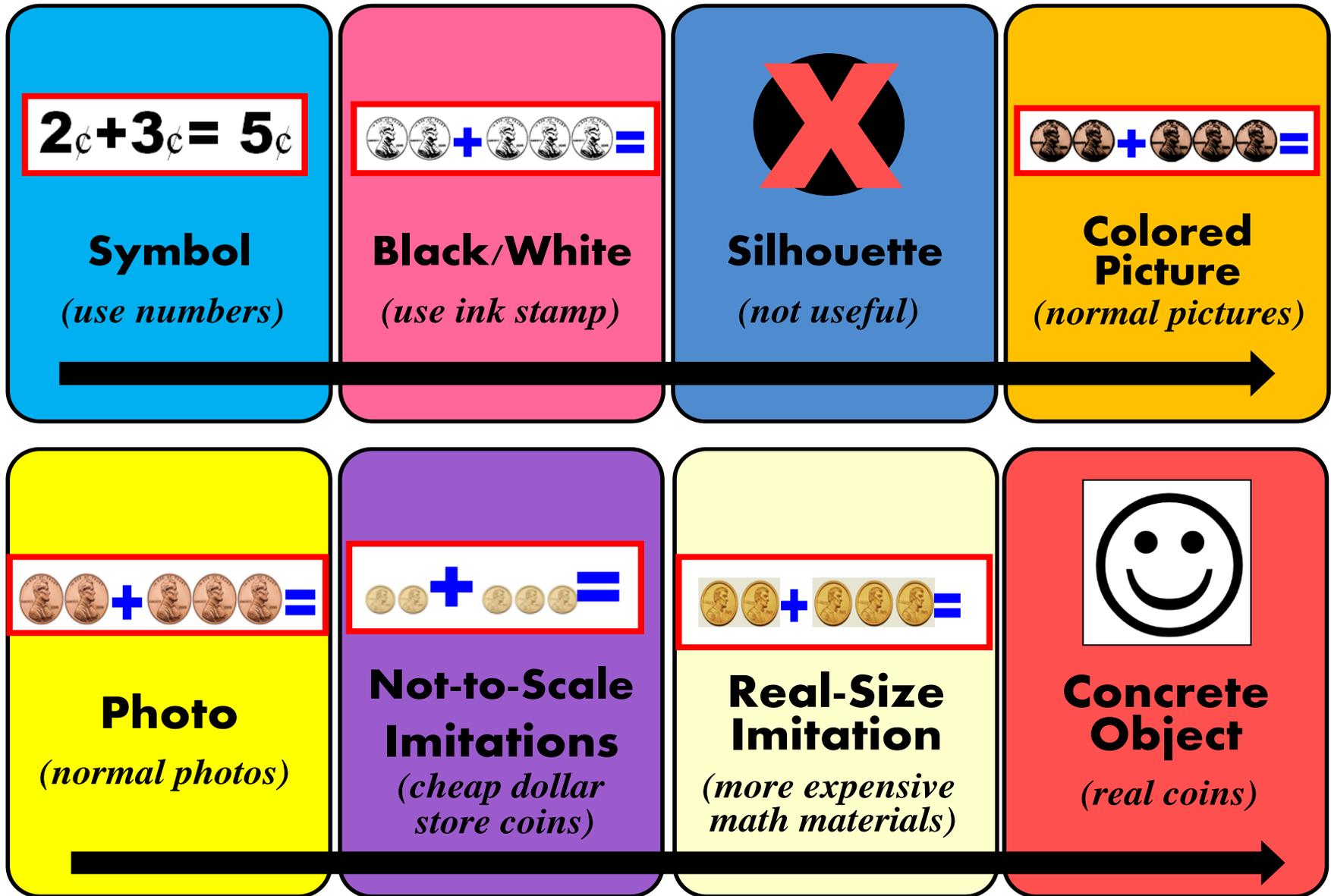
In addition, we can see the usage of the visual cue sequence in many aspects of our daily life.

For example, road signs are silhouettes…ever wonder why? They are processed more rapidly than a similar black and white line image.

The continuum of visual cues can even be seen in word processing. Just take a look at the image to the right and see how our typing mirrors the visual cue sequence shown on the previous page.

Clearly, if we wish to make a word or sentence stand out (or be retained in memory at a higher level), we resort to using a lower visual cue level. You may not have realized it, but you use the visual cue sequence almost every day of your life.

If we are typing something normal, we use the regular font.
(Symbol Level)

If we wish to emphasize it a bit, we underline it.
(Black & White Line Level)

If we want it to stand out more, we put it in bold.
(Silhouette Level)

If we want it to jump out, we put it in color.
*(Colored Picture Level)*

It is hard to understand why changing the levels of some of the visual cues (i.e. black & white line, silhouette, colored pictures, etc.) would matter so much. After all, they are all two-dimensional objects. But, it really does make a difference. Just look at how the dimensions of a puzzle piece become more and more highlighted as you move from symbol level to the black and white line level and then to the silhouette level. A child definitely gets a better sense of shape at the silhouette level.

Like I mentioned earlier, you do NOT need to do this to all your materials, nor will every child need every single visual cue level to learn a skill. But, if you have a child who is struggling or has special needs, the visual cue sequence can definitely assist you!

So, how would you use the visual cue sequence to support play? It can happen in many, many ways. Maybe you will merely be cueing play areas using the visual cues appropriate for your group of children:

Picture cues for the art center

True Photograph

Colored Picture

Black/White Picture

Black/White Line Drawing

Most children process these two levels in the same manner...
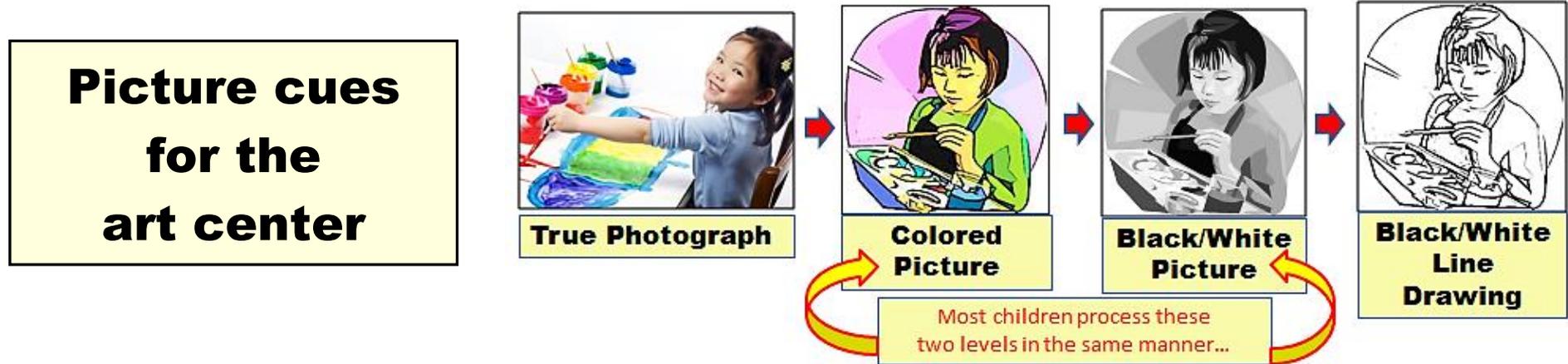
Or, you may recognize that your children need something more than colored picture cues and replace them with photos or one of the three-dimensional levels (miniatures, real-size imitations or concrete objects) when you create items like a schedule:

Photo

3-D

Piece of the carpet used in circle
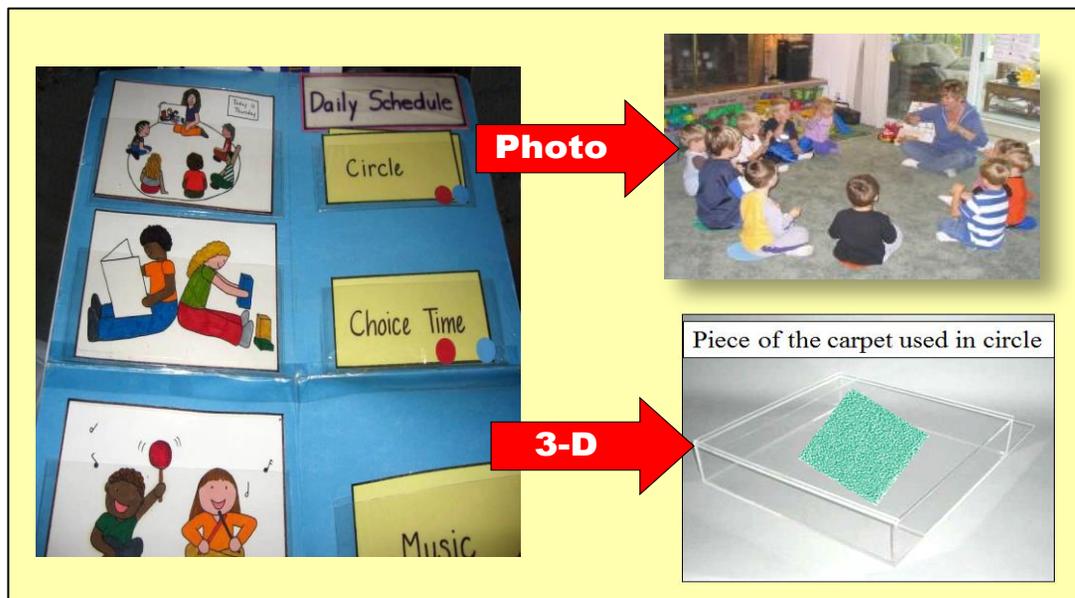
These variations may need to be applied to other materials in your classroom, like these choice-making necklaces:

Sandbox Choice Making Cues

| Sandpaper Square | Photo | Colored Picture | Black/White Line Drawing |
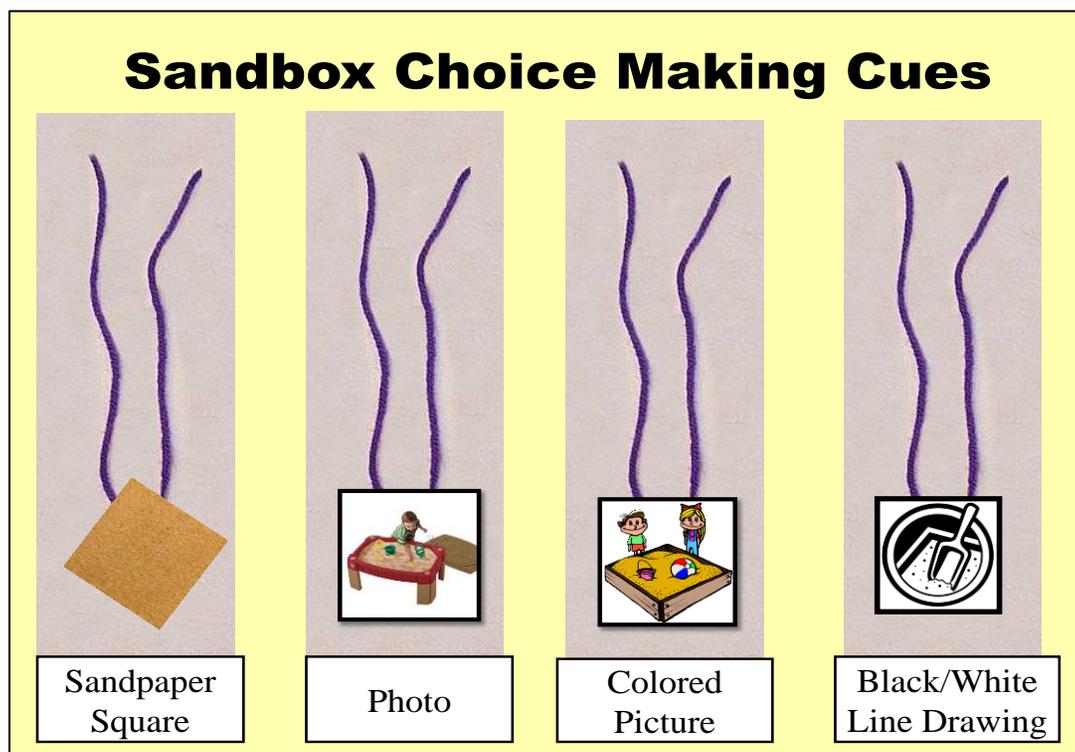
Modifying the Visual Discrimination
Sequence of Puzzles

Original Puzzle

Inserts
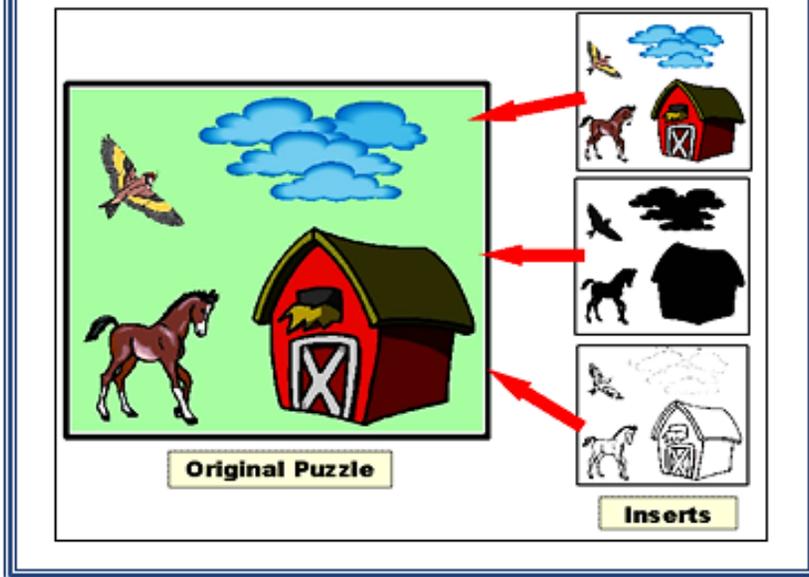
As you become comfortable with the visual cue sequence, you will become more and more skilled in using it to individualize environmental materials and toys in the classroom. For example, look at the different ways you can cue a puzzle back (at left).

By placing plastic wrap over a puzzle and photocopying it in color and then converting is using photo software to total black (silhouette) and black & white line (coloring book function), you can create three different cues to lay into the back of the puzzle to assist children struggling with the task. It is an easy way to create individualized instruction for a class with divergent developmental levels.

You can even use the cue sequence to help a child struggling with organizing their schedule for daily tasks and play. In this case, by using a personalized and wearable visual schedule, as shown to the right.

So many uses---so many that I am sure you will come up with many more ideas than I have presented here. If the idea of supporting behavior using this approach intrigues you, make sure to take a look at the behavioral support materials on this website.

Meanwhile, let's return to the topic of play ☺

Some children may need to "wear" the daily schedule or their play choices

Circle   Outside   Wash   Lunch

Blocks   Art   Science   Writing
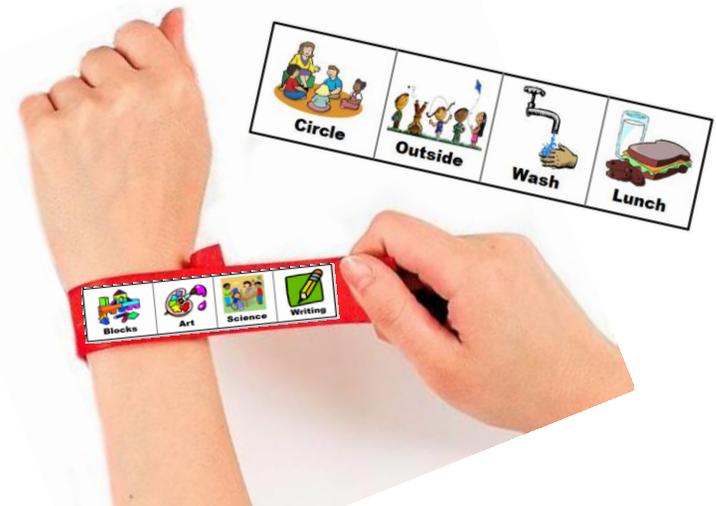
Part-to-Whole and Whole-to-Part

The last foundational concept we will address is the **direction** of a child's play style. This concept will be critical when we develop interventions down the road. Let's begin by defining the two basic styles of memory put-down.

There are two different ways in which we process information. The first approach, *Whole → Part,* is used when a person processes tasks as a whole and then breaks them down into smaller parts for further processing at a later time. People who process in this manner have amazing ideas but only later determine the needed steps to accomplish them.   In some cases, they never actually get around to figuring out those details, so the wonderful idea (the whole) fails due to lack of planning the small steps (the parts). For example, someone with a great idea for a party who forgets details like purchasing forks, getting ice, etc.

Whole

to Part

Part

to Whole

Someone who is *Part → Whole* does the opposite. This type of person tends to analyze the details/steps and slowly link them into a whole concept over time. This person creates lists, spreadsheets, color-coded categories, and other organizational schemas. They spend their time analyzing and planning…sometimes going so overboard with that aspect of the task that they become overwhelmed with details and have little time left to actually carry out the plan.

It is great fun to reflect on this concept and analyze your behavior and the behavior of those around you. Often our difficulty in working with someone comes down to the fact that they process in the opposite direction. Nothing irritates a "planner" more than working with someone who "just begins without thinking things through". Conversely, a person who is whole-to-part is ready to "get on with it" and is frustrated by working with someone who wants to "wait and plan it out". Definitely interesting to examine! The main thing is to understand the nature of these two directions and their implication for function. An individual will not always operate one direction or the other, but we can definitely see tendencies.
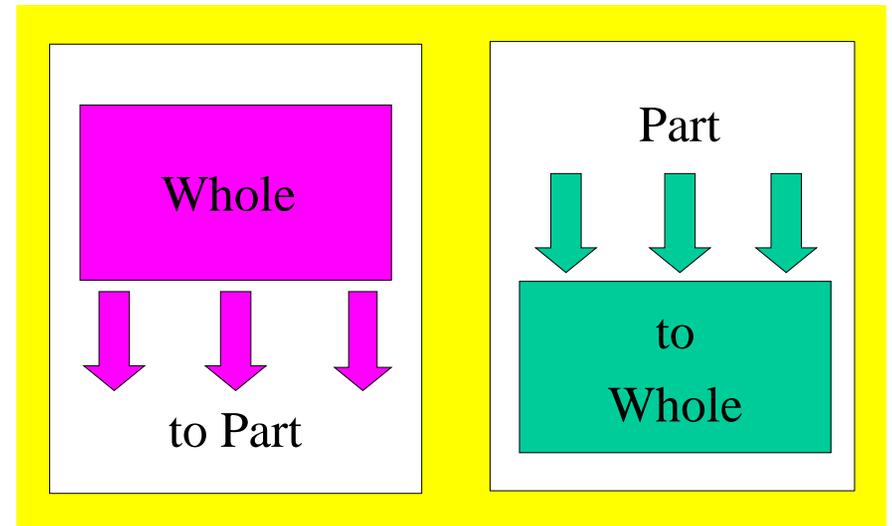
Now that we have a handle on the two processing directions, let's apply it to the classroom. Overall, our curriculum can be separated into two global approaches. Part-to-Whole designs have a developmentally sequenced set of activities that are presented in order so skills are built systematically over time.

The Whole-to-Part approach assumes that the child will make sense of the different pieces of a skill, so the child choosing various activities out of order is not a concern. Yes, they may be out of sequence, but the child will eventually link them into a cohesive "whole" and form complete understanding over time.

Most programs use a mixture of these approaches, especially in the early grades.

We can see a bit more of a dichotomy when we look at older elementary school. The Whole-to-Part design continues to embrace experiences and choices, regardless of whether they are in sequence. This approach is also mirrored more strongly in integrated curriculum activities where the student is exposed to concepts from various subjects like math, reading, and art all within one activity. It is assumed the child will eventually link the content back to the original subject matter and construct specific skills in that subject over time.

The Part-to-Whole method tends to keep skills sequential and separated as much as possible so they are introduced in a controlled order. The child can then take the skill learned and apply it in different contexts (subjects) after the fact (i.e. learn the spelling word in spelling and then use it later in reading, social

PART TO WHOLE	WHOLE TO PART
Guided Learning	**Discovery Learning**

PART TO WHOLE	WHOLE TO PART
Isolated Subjects	**Integrated Subjects**
Science · Spelling · Social Studies · Reading	Science · Spelling · Social Studies · Reading
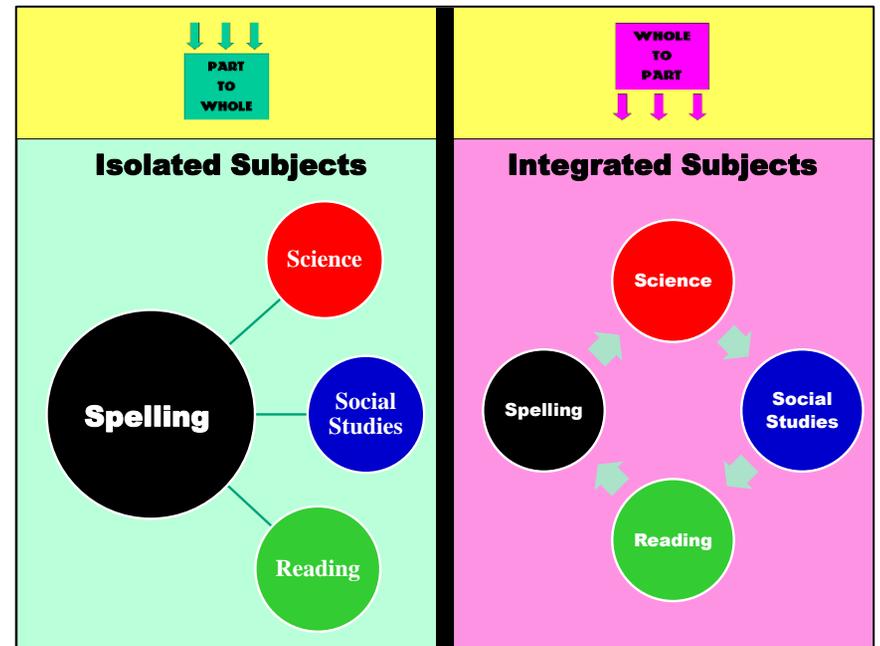
studies, etc).

I am often asked which approach is better. Well, my answer is *neither* is better. It really comes down to which approach is best for that child's neurological processing style. That is why arguments about phonics and whole language are so foolish. One approach is very Part-to-Whole (phonics), and the other approach is obviously Whole-to-Part (whole language). In my experience, roughly 2/3 of a classroom tends to be Part-to-Whole thinkers and the other 1/3, Whole-to-Part. So, we will always need to be using both in our classroom simultaneously. If we do not use both types of reading instruction, we are missing some of the children.

This type of analysis crosses all subjects, by the way. In math, we can see the difference between curriculum designs that emphasize computation/equations (Part-to-Whole) and those that emphasize hands-on activities and problem solving (Whole-to-Part). The same goes for even something as simple as journal writing. Some writing supports give you a piece/part to begin with, for example, Story Starters (Part-to-Whole), while other approaches give a global direction to "write in your journal" (Whole-to-Part) and expect the students to generate the parts on their own (e.g. what to say, how to say it, what to write first, etc.). It is definitely interesting to examine materials using this concept!
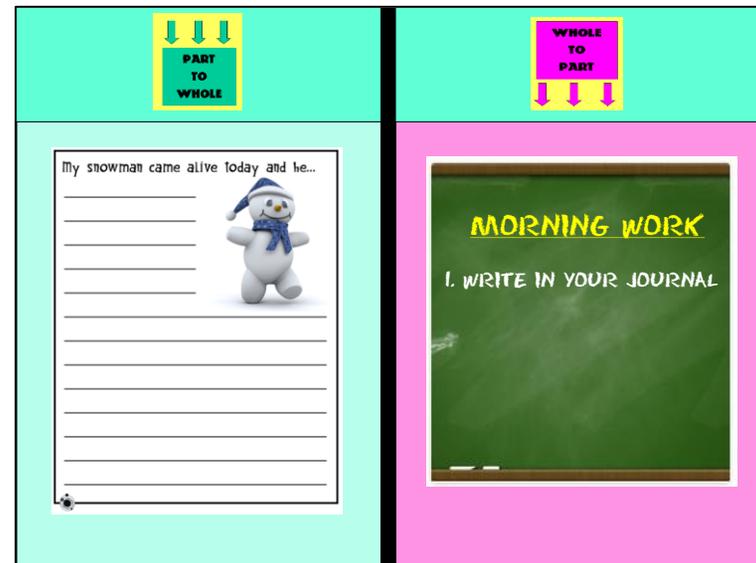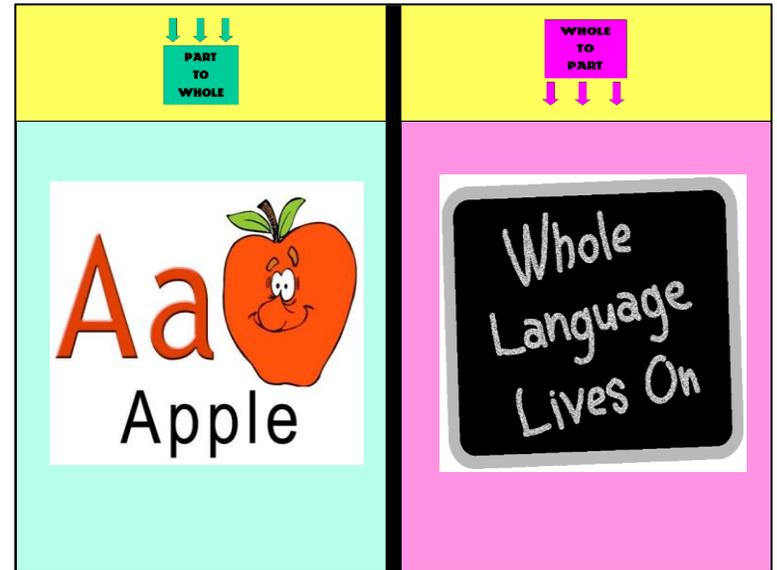
What about play then? How does this concept figure into the activities of our littlest ones? Well, just look at something as simple as the art center. Craft-based art is very Part-to-Whole. It is art that has a series of pre-determined steps for the student to carry out. Some children really need this type of structure to be successful or to support disabilities, and others only need it for new or difficult tasks (i.e. learning to draw details like eyes or drawing in perspective).

Discovery art is the opposite. It is very Whole-to-Part and allows the child to determine the sequence and outcome of the activity. Many children not only enjoy the freedom of this type of approach, but it also supports enhanced creativity and problem-solving. In other words, there is a place for *both* forms of art in your program.

So, how can you tell the directional style of a child's play?
I have found the easiest place to observe their style is to watch them in blocks or in housekeeping. This is what you'll see for each style:

Part-to-Whole Players
Housekeeping: Spend time setting up. When the setup is finished, they only carry out the scenario for a moment or two
Blocks: Spend all of their time building but rarely use what is built

Whole-to-Part Players
Housekeeping: Come up with an idea ("let's play store") and begin immediately. Find pieces they are missing as they need them ("Oh, we need coupons--let's make some!").
Blocks: Decide on an idea to carry out ("let's make a stadium") and create enough of it to begin the storyline. Will then add additional pieces or props as they come up in the story ("find some long pieces so we can make benches").
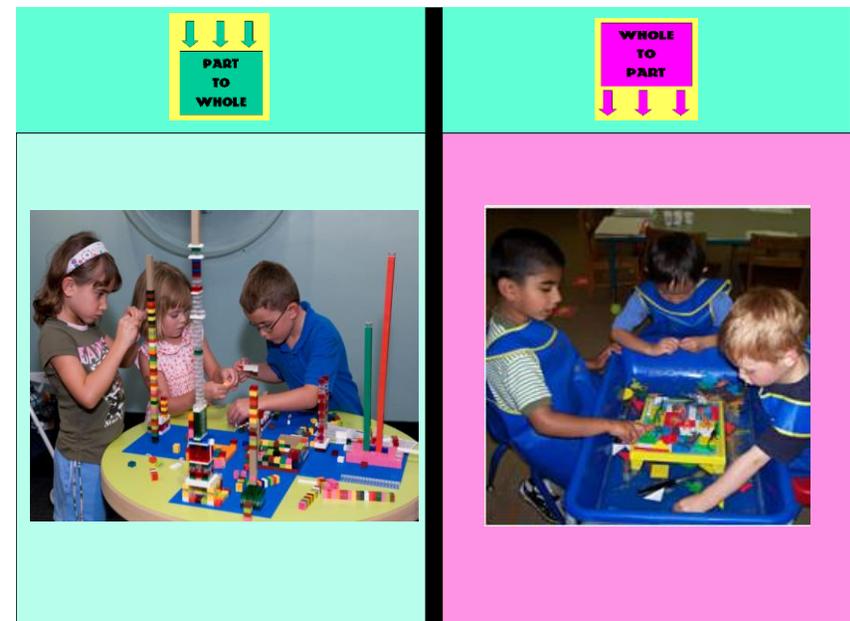
We will come back to this concept a few times more when we look at setting up the classroom for play and running play interventions. Meanwhile, let me leave you with one more "non-play" application so the power of this concept is fully understood!

Like I mentioned earlier, this tendency underlies all learning and that includes the ability to learn a behavioral skill. This means that some children who are Whole-to-Part in their processing style will use that same approach to analyze whole behavioral experiences and figure out the specific steps or skills needed to match what they see. This type of child can sit in circle, experience your responses to their behavior, and notice the small little things being mentioned to other children (e.g., sit in your own place, keep your hands to yourself, take turns speaking, etc.). In other words, they experience the whole of "circle time" and eventually figure out the small little pieces or rules that will make them successful.

Children who are Part-to-Whole in the extreme may struggle with this type of environmental/incidental learning. They learn step-by-step and may need to learn behavioral skills in the same manner. So, this child must learn to keep their own seat----<u>then</u> they must learn to keep their hands to themselves----<u>then</u> they must tackle taking turns, and so on. They must learn each behavior as a separate skill that will hopefully be coordinated together at a later point.

It is so important for behavior therapists and mental health support teams to understand the implications of this type of learning profile! Children who are Part-to-Whole do not learn well through role playing, observation, videos, and other experiences where the behavior is shown as a whole. These children must use sequenced social stories, isolated skill practice, and visual cues *for each specific part of the behavior* until they learn each one completely. These can then be successfully combined later. This is an essential technique to note because too many behavioral interventions focus on Whole-to-Part methods that are not appropriate for some learners ☺

Whole
to Part

Appropriate Behavior in Group Activities

hands to self

feet to self

listen

take turns talking

Part
to Whole
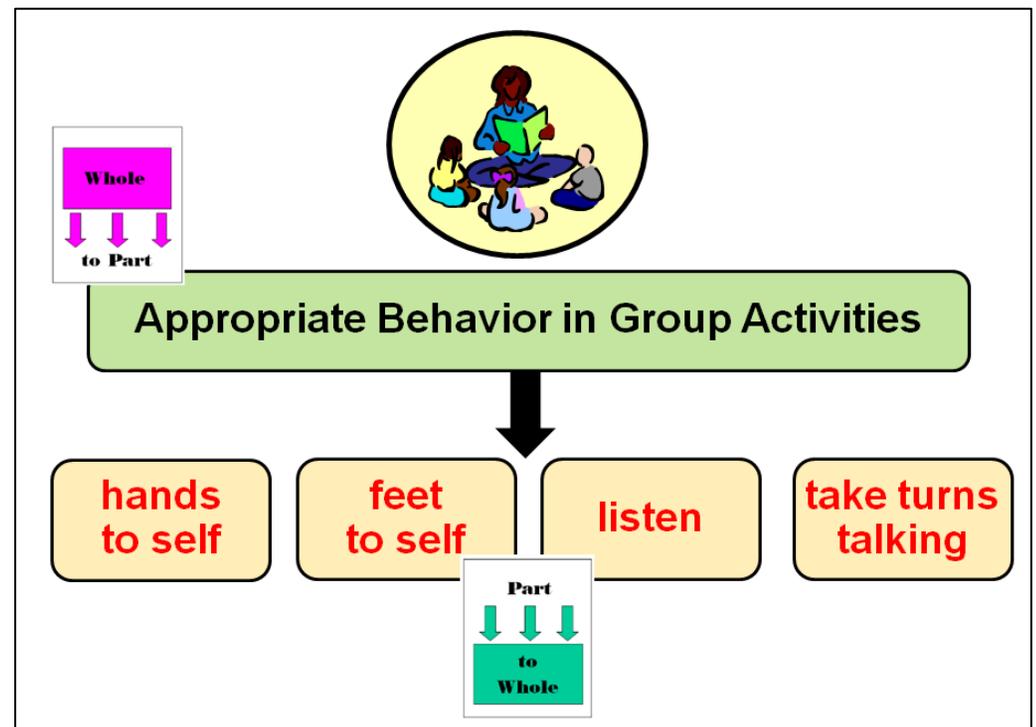
Caution Concerning "Modern" Toys

Before we move on to the topic of play support, I would like to mention a strange little quirk with our "modern" toys. Have you ever wondered why our children are having so much trouble jumping up to the symbol level of visual cues (reading)? After all, they have more toys and educational experiences than any generation that has come before them, so why the difficulty? I am firmly convinced that this problem stems from missing segments of toys. To remind you, here is the visual cue sequence again:

apple			
Symbol	Black/White	Silhouette	Colored Picture
Photo	Not-to-Scale Imitations	Real-Size Imitation	Concrete Object
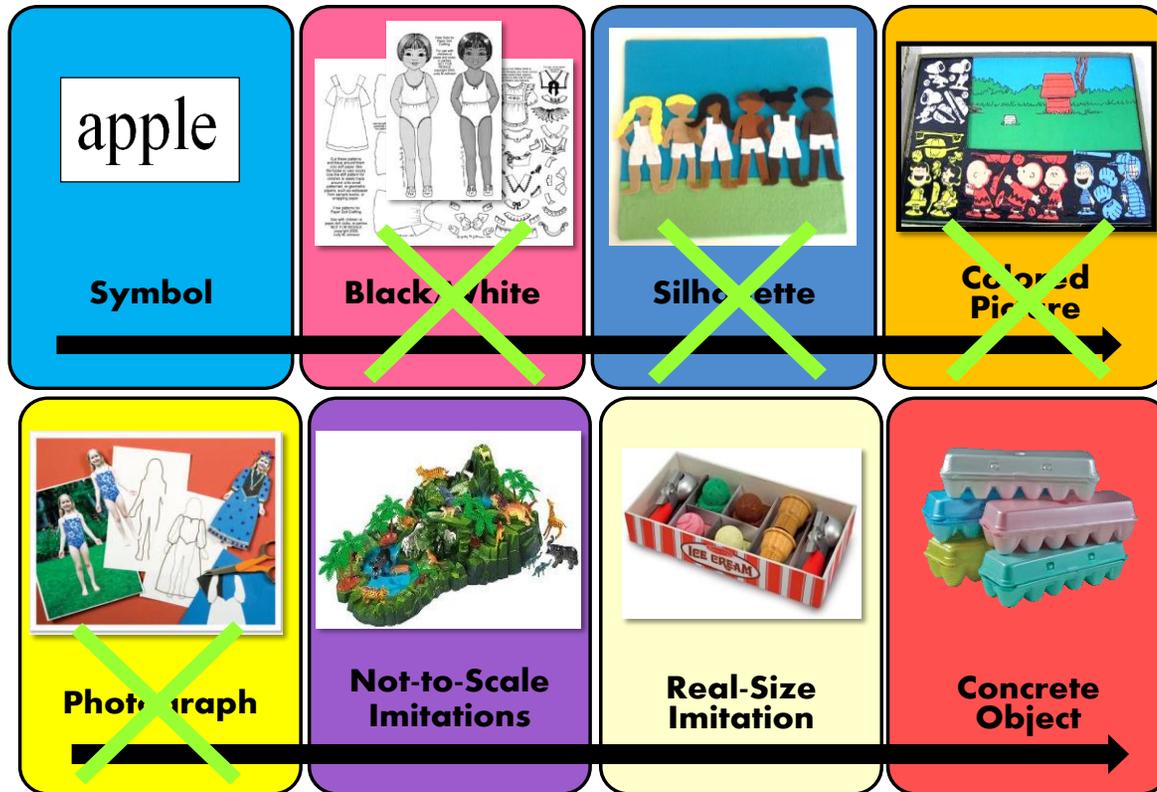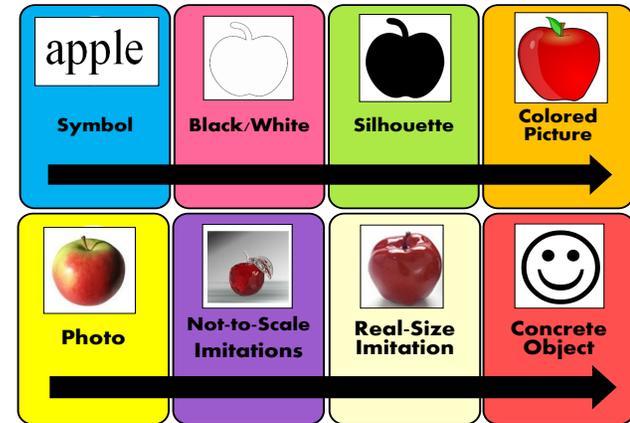
Now, let's think about the toys that are in each category. We have concrete objects and real size imitations, usually in the dramatic play areas. We also have many not-to-scale imitations in many different centers….little animals, people, cars, etc., so that category is covered too. But, what about the 2-D level, where are those toys? Some might say we have books, but books are not "toys" or used like toys.

apple			
Symbol	Black/White	Silhouette	Colored Picture
Photograph	Not-to-Scale Imitations	Real-Size Imitation	Concrete Object

This is the section of play materials that is now missing in the modern classroom. We used to have plenty of these 2-D toys in the past. We had colorforms, paper dolls, flannel boards, magnet boards, etc., but these materials are very rare now.

I am firmly convinced that this is why our children are finding it much more difficult to move to symbol manipulation. They are having to make a pretty big jump from the highest 3-D level (not-to-scale imitations) all the way up to symbols, and most simply can't do it easily. Throw in the fact that our modern 3-D toys are more realistic and closer to concrete items than ever before (children have to symbolize/pretend much less in their heads), and you really have a mess.

Old Style

New Style

So, if this idea intrigues you, make sure to read the booklet at www.Neuro-Teach.com titled, *The Missing Visual Cue Sequence: Solving Literacy Problems in Modern Classrooms*, I'm sure you will find it quite interesting. It will more fully explore the modern classroom in relation to the visual cue sequence and then provide general interventions you can use to enhance symbolic play and boost literacy.

Please know that the newer (and very cool toys) should not be purged from classrooms, we just need to bring back the lovely, older materials as well. There is a place and need for both!

General Play Support

Environmental Design

So, let's move on to environmental designs that will support play and play intervention. The topic of room setup in term of areas is well covered in many resources, so I will not bother covering that here. Instead, we will take a brief look at environmental design as an expansion of the Part-to-Whole and Whole-to-Part concept we just discussed.

As you now know, children who are Part-to-Whole may have difficulty entering a large, undefined task or situation and then being able to figure out the steps to take to initiate action. Now, let's think about our typical play environments. They are pretty fluid and undefined, aren't they? There is nothing wrong with this type of design, by the way, it is actually preferable in my mind...it lets you meet the needs of the Whole-to-Part learners in your room. But, what about the child who needs structure to either play well or maintain appropriate behavior? It is that child who may need a bit of assistance, and you can easily provide that help by infusing your environment with small supports. Let's begin by analyzing our play areas, realizing that this analysis will vary greatly depending on how you teach and which curriculum you use.

There are many areas in our room that are very Whole-to-Part. These areas (sand, water, etc.), require the child to construct their own play. This can be a very challenging task for some children and may contribute to the higher number of behavior problems we see in those areas.

Other areas are more structured so their tasks have specific actions that are automatically suggested. In some cases, there is even a set sequence which should be used. Part-to-Whole areas like puzzles are favored by children who like the "have to do it this way" structure, but other children may find them boring or frustrating.

Lastly, there are areas which vary a great deal, depending on the activity provided. These flexible areas include many of the functional academic areas such as math, science, etc. These locations can have very Part-to-Whole tasks such as academic games but may also include extremely open-ended and interactive activities as well. A great deal of the processing direction in these areas is determined by the teaching style and materials used in the room.
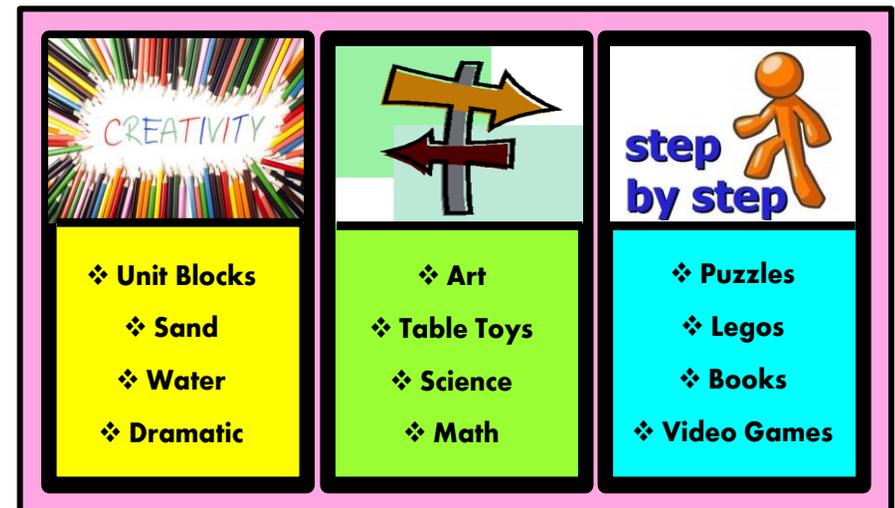
Given this structure, we can see how children who tend to be Part-to-Whole may struggle in the more fluid areas of the classroom. They have difficulty envisioning what to do and may not be able to generate the parts (play behaviors, themes, or concepts) that can be used successfully. The wonderful thing, though, is if the child is typically developing, it takes very little adjustment to help them along.

Prepping a Play Area
There are many ways to provide the support a Part-to-Whole child may need, but my favorite way is to just "prep" the area once every one or two weeks.

What does this mean? I just set up an area in the room that tends to be very open-ended with a new idea, concept, or material. I rarely even have to say anything about the addition. The children make their play choices like normal, but when they go into an area like blocks, they will see a change that pulls their attention and suggests a new type or level of play. Here are some examples of materials you can add or things you can do:

Open Center

Prepped Center

*New figures (people, animals, dinosaurs, birds, cars…)
*New themes (airport, gas station, recording studio, ice rink, parade…)
*Unusual materials (pom-pom balls, rocks, fabric, pipe cleaners…)
*Enhancements for known themes (road signs, masking tape to make roads…)
*Advanced building elements (awnings, arches, towers, multi-layered buildings, stairs…)
*Motivational pictures (stadiums, castles, famous buildings, bridges…)
*Academic challenges (building with a certain number of blocks, colors, height…)
*Embed academic skills (make signs, fold origami figures, create toll roads…)
*Embed intervention goals (reduce cars size to enhance fine motor, name buildings to target speech sounds…)

I am sure you will come up with many more ideas on your own. The main thing is to understand that some children *need* a bit of scaffolding to be successful. Do not be afraid to provide little "jump-starts" to any area of your room. ALL children will appreciate the new ideas and benefit from your efforts!

Basic Toy Sequencing

Now that we have covered how to scaffold areas of the classroom, let's turn our attention to completing the same process for toys. A professional's ability to discern the levels of a toy really just comes down to developing great observation skills and practice. Let's walk through one example (puzzles) in detail to illustrate the general concept.

Puzzles have two general variables that must be considered:
1. Fine Motor- How the pieces are handled and fit together in terms of the physical process.
2. Visual Discrimination- How construction of the puzzle is visually processed in terms of color, shape, and concept.

We will look at the fine motor aspect first (seen to the right). Since puzzles are so complex and the variety so wide, you will need to be flexible with this illustrated sequence, but the overall progression is easily understood.

It is critical to understand that the number of puzzle pieces, an often-used measure for play assessment, may not be the appropriate measure for children who experiences fine motor deficits. For that child, a six-piece puzzle with interlocking pieces could be considerably more difficult than a puzzle with many more pieces that do not lock. This is definitely something to keep in mind when completing play-based evaluations.

The second variable is a bit more complicated since the various levels are often blurred. In general, though, the following visual discrimination sequence will hold true for most puzzles:

Large Knob → Medium Knob → Small Knob

Elevated Pieces → No-Locking Pieces → Simple Locking Pieces

Locking Pieces → 3-D Construction
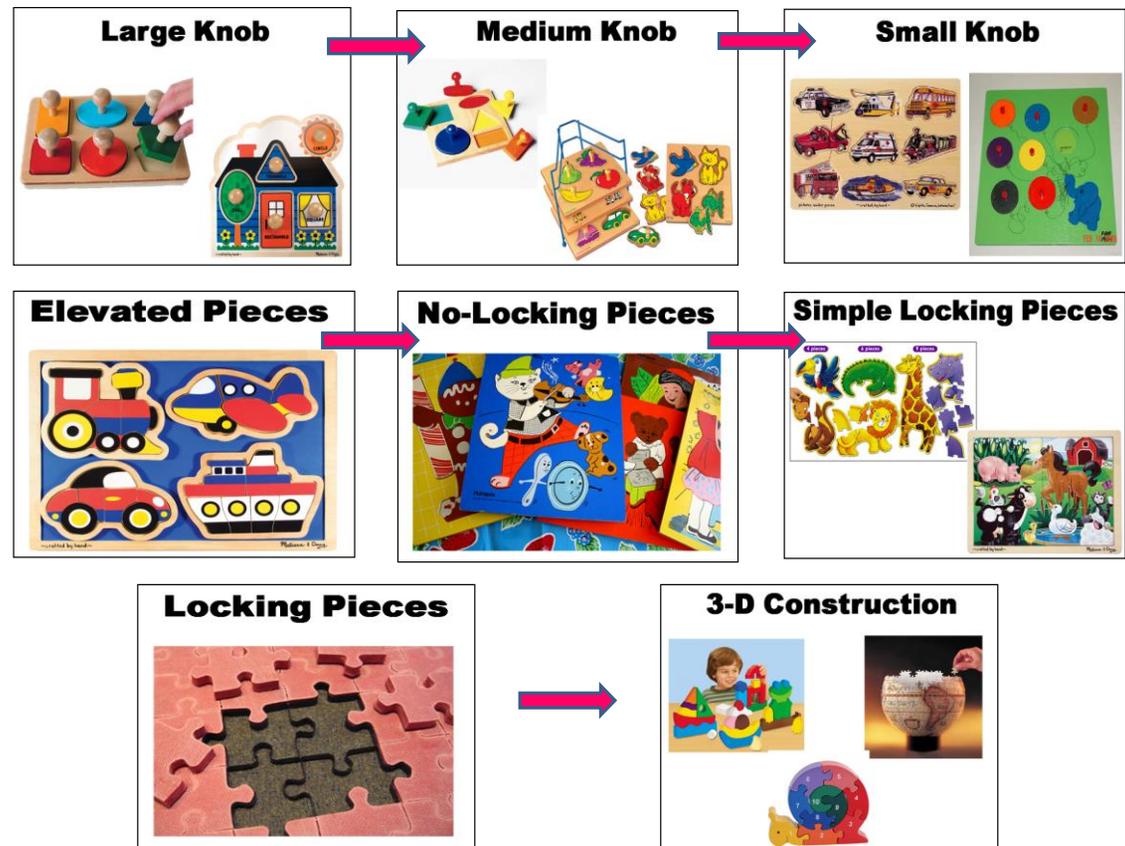
Whole Piece

Objects are presented in complete "wholes". Sometimes the whole pieces are grouped in a logical manner (i.e. all are pets), but children rarely pay attention to that artificial grouping when completing the puzzle.

Whole with Background

Objects are presented in complete "wholes" but puzzle background provides additional information. This forces the child to begin to visually consider these other "pieces" as part of the picture.

Logical Division

Objects are divided into pieces, but the pieces are based on logical divisions that helps the child figure out where they should go (i.e. The dog puzzle is divided into the dog's legs, face, tongue, bone, ball, etc.)

Non-Logical Division

Objects are divided in to randomly-shaped pieces that do not interlock.

True Jigsaw

Pieces that interlock, first with smooth edges and eventually in true, jig-saw puzzle form with pieces that lock in place.

Cognitive Overlays

Puzzle introduces some additional concept that could helps the child put the puzzle together or requires an additional skill for completion. These can be fine motor based or involve cognitive concepts (i.e. which items go together, geometric shapes, etc.)

These cognitive overlays can help some children by adding additional cues or excitement, but for others, it increases the difficulty or reduces interest. Here are some examples of puzzles with cognitive overlays that can be seen on the market at this time:

Additional Cues

Multiple Visuals

Additional Concepts

Additional Play Value
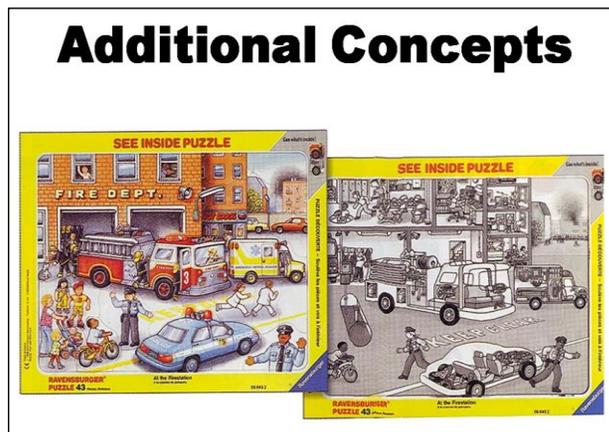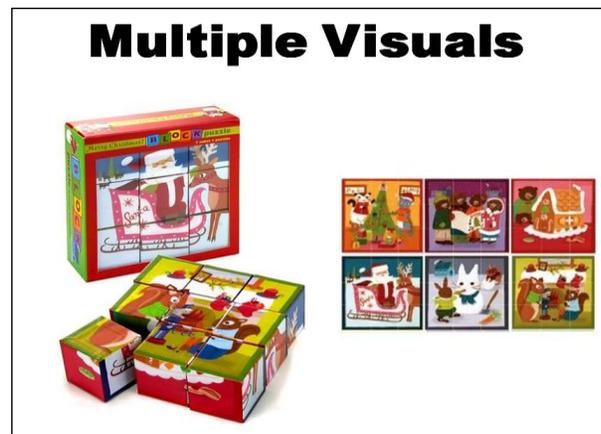
The same concept discussed for fine motor applies here---the number of pieces may or may not increase the difficulty of the puzzle when the visual discrimination demands are examined. In other words, a ten-piece puzzle may be easier for a child if the puzzle is using logical divisions than a six piece puzzle that uses non-logical divisions or interlocking pieces. Again, this is something to keep in mind for play assessment purposes.

Now that we have examined both variables, though, another issue can be clearly seen. There may be a problem in how the two sequences interact.

In most cases, the puzzles that involve simple levels of fine motor (e.g., puzzles with knobs) also tend to be the puzzles that have the simpler visual discrimination demands (e.g., whole pieces or logical divisions). In other words, the two sequences are held in tandem:

This causes problems when a child is age-level in one skill (i.e. visual discrimination) and has deficits in the other (i.e. fine motor problems). A child with that profile needs the knobs to control the pieces, but the only knobbed puzzles available are usually babyish and far below the child's visual discrimination abilities so the use of puzzles is avoided.

If you have a student with this problem, just modify the sequence that is too high. If the student needs knobs on a visually challenging puzzle that could be completed if the fine motor demands were reduced, add those knobs somehow (e.g., using suctions cups, etc.). If the student has wonderful fine motor skills and can put together interlocking pieces but lacks the visual discrimination skills to complete puzzles at that level, photocopy the puzzle (I wrap them tightly in plastic wrap so I can turn them over on the copier), and then cut and insert that picture cue into the frame in the manner shown earlier. This will provide the extra visual discrimination assistance they need. By adapting the problematic variable, you can make a toy that has been previously avoided interesting and accessible once more.

This same sequence analysis can be performed over and over again for any toy in your room. Consider how handle size and bristle dimension and stiffness interact in paint brushes.

Just looking at the brushes to the right, you can easily see that the bristle circumference goes up in tandem with the handle size. In other words, big handles usually also mean bigger and stiffer brush dimensions. This is just fine for a child with typical development but a real issue for a student who has the ability and desire to paint in a more symbolic form but needs the fine motor assistance of a larger handle. Those big, bulky bristle heads make a painting look infantile...just try painting with one yourself, and you will see what I mean!

The solution? Either build up the handle of a brush that has a smaller brush ending or trim and reduce the length and circumference of the bristles on a paint brush with a larger handle, either will work. The main thing is to think through the variables and the sequences in some of these toys and pieces of equipment. They really do make a difference in how a child will play in your room. Here are a few more to mull over and the variables you may want to consider:

1. Strength required to put down color (wax level of crayon)
2. Circumference of crayon in relation to fine motor grip required
3. Circumference of crayon in relation to line produced (bigger = infantile)

1. Strength required to squeeze bottle or push down on glue stick
2. Amount of fine motor control required to apply glue evenly (w/out lumps)

1. Strength required to push beads together
2. Dimension of bead hole in terms of accuracy required
3. How tightly beads fit together (affects length of string possible)

Material Design Concepts

Fully Understanding and Using Sequences in Planning (Example: Cutting)

Now that we have explored a few sequences in terms of the multiple variables they may contain, let's return to some basic sequences and see how we can use them to more intensely target play experiences for our students. We will start with a well-known sequence, cutting with scissors. Of course there are precursors to the use of scissors (i.e. full hand strength → finger strength → pincer strength…) but the actual act of cutting can be roughly characterized as shown to the right.

Of course, we can always develop activities to target any level of this sequence, but what do you do if you have a classroom that has children at many levels and you use an open-choice art center? How do you keep that center available as a choice but still provide the level an individual child needs to be successful <u>and</u> challenged?

Cutting Sequence

- One-Snip Cutting
- Linked Snips
- Straight Line
- Square Corner (Adjusted
- Square Corner (Smooth)
- Curve (Adjusted)
- Curve (Smooth)
- Circle
- Reversal
- Complex Shapes

Easier

Harder

There are many ways to do this, but one of my favorite ways is to pre-prep the materials ahead of time and have them in the children's cubbies for their eventual use. This is easy to do with an open-ended art activity, so let's look at a more challenging example, an activity that is more craft-like in nature with a pre-determined level of skill required. We will use the sheet shown to the left.

If a child was to cut out this figure, it is clear that they would have to have cutting skills at the complex shapes level. They would have to be able to cut lines, corners, reversals (cut one direction and then turn and go in another), etc. In other words, this would be a challenge for all but the best of cutters in your room. Now let's adapt it a bit to show individualization of the task.

We will target the lowest skill level first. These children can cut a single snip and are

slowly moving to cutting two and three snips in a row, a skill that will allow them to eventually cut a straight line. For these children, we can artificially cut out long strips (the portions shown in gray) leaving paper strips of varying widths (shown in white in our example) for the child to cut out on their own. By controlling the number and width of the strips you leave, you can gently increase the skill required (having to cut only one or two strips to finish and then eventually more) and the level of the task (having to cut strips that only require one snip and eventually strips that require two, three, or more snips). In other words, you can systematically move them to the next cutting level over time.
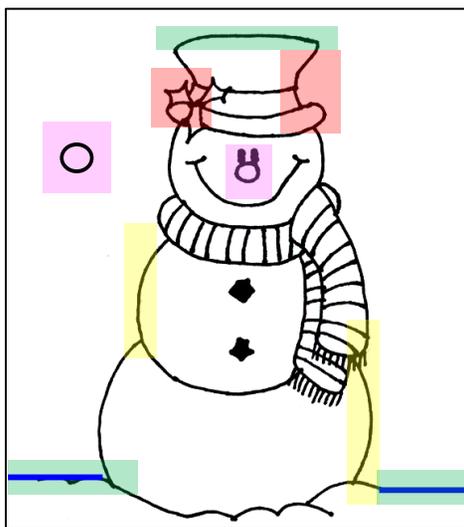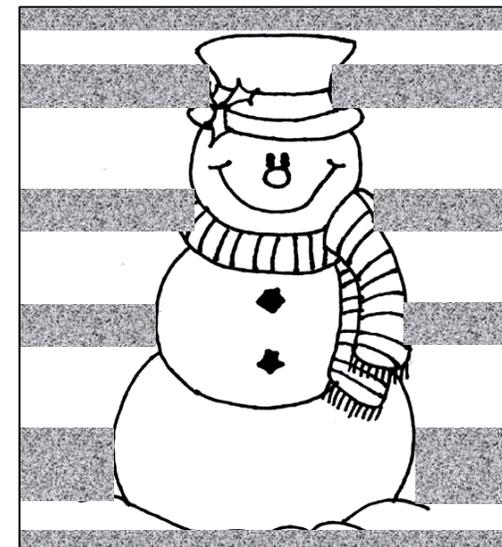
This same process can be repeated for the other levels of skill as well. The sheets for the children who need to work on true straight lines might have artificial straight lines added at the bottom (highlighted in the picture to the left in green) and all but those lines and the straight line at the top of the hat (in green) are already cut out for that student. That way the child is concentrating on the skill(s) they need and the rest of the paper that is too difficult has already been cut away and removed. Children working on *cutting curves* would have the green straight lines left <u>plus the yellow curved portions</u>, and the the more difficult pieces already removed.

If you need a cutting level, like cutting a circle, but it is not on the picture, just add artificial pieces for the child to cut, in this case, the pink highlighted nose. The children just beginning to work on reversals can cut out the whole picture except for the very challenging sections shown in red highlight. Those sections could be pre-cut for them.

This seems like a complex preparation task, but I promise it takes longer to explain than to actually complete! You know your children and their current level of skill, so if you have seven children at the straight line level, just put those seven papers together, cut out the sections that are too difficult and leave the papers in their cubbies so if they choose art, the paper is ready for them. The same with the other levels--- just put the number of papers needed together and cut that level all at once. It takes a few minutes at most and will really allow you to actively move the child to new levels of skills. <u>This type of activity setup does not need to be used every day</u>, by the way, but it can be a nice addition in classrooms that need individualized activities during free play for a very diverse group.

## Creating the Lower End of a Sequence (Example: Colors)

Sometimes the creation of these targeted activities can be challenging since all levels are used interchangeably, and this can confuse children who are sensitive to that type of level jump. To illustrate this problem, let's look at a sequence that is often used improperly, the ability to recognize colors. The levels of this sequence are as follows:

Generalize
Name
Find
Visual Match
Physical Match
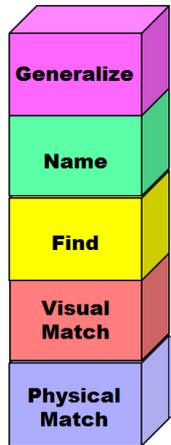
Child matches unconsciously during play (physical cue)

The first level (**Physical Match**) is typically seen in infants and toddlers. These little ones do not understand what colors are and cannot find them on a command or cue, but they DO intuitively recognize them physically. We can see this when a child always selects a certain color toy, shows a preference for clothing with certain colors, etc. They detect the difference in color and use in in their activities.

This age group can be encouraged to physically match colors by just making simple matching activities available in play areas. Colored dishes with the same colored food left out in the housekeeping area is a wonderful example. You can name the colors for the child at this level, because that is a necessary piece of information they will need for the next higher level, but do not expect the children to perform this matching on your direction. Just allow them to play and see how they physically (and unconsciously) match on their own. They will eventually begin to purposefully match the items, and this is a signal they are moving to the next level.

Generalize
Name
Find
Visual Match
Physical Match
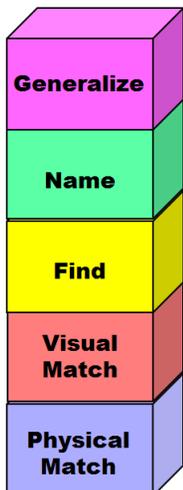
Child matches when shown a similar color (visual cue)

Child matches unconsciously during play (physical cue)

At the **Visual Match** level, the child can match colors using a visual cue. This means that they see that the same colors are being grouped and will perform that matching in a purposeful manner. They still cannot find a color using an auditory cue (i.e. "Can you show me blue?"), nor will they usually name the colors on their own, but they can match items when shown a color.

You should continue to provide the names of the colors during this play so the child will eventually move to the next level of the skill. Provide lots of practice but do not fatigue the child by demanding this type of task repeatedly.

Generalize
Name
Find — Child finds a color when it is requested (auditory cue)
Visual Match — Child matches when shown a similar color (visual cue)
Physical Match — Child matches unconsciously during play (physical cue)
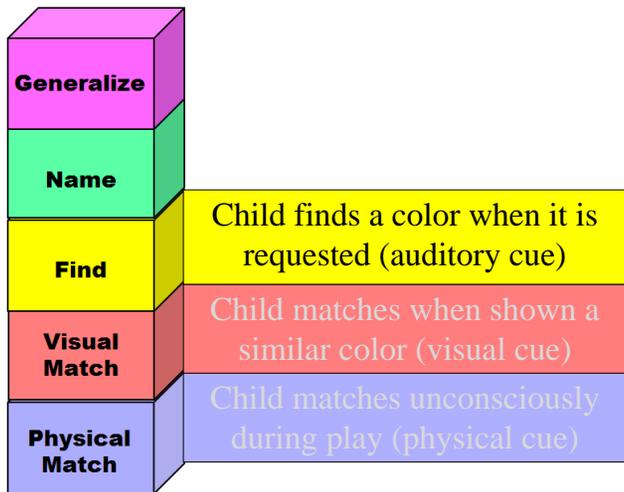
Children who can match using an auditory cue are at the **Find** level. They can find the color *being requested* without relying on additional cues (i.e., being visually shown the color).

This level is often confused with the match level, and since most children learn them at different times, mixing them up yields data that is inconsistent. I made this error often in my earliest days of teaching. Now, looking back, I can see that at times the task I gave was a visual match one, and at other times, the task was a Find or Name one. No wonder my data for some children jumped all over the place ☺

Generalize
Name — Child names color when asked (cognitive cue)
Find — Child finds a color when it is requested (auditory cue)
Visual Match — Child matches when shown a similar color (visual cue)
Physical Match — Child matches unconsciously during play (physical cue)
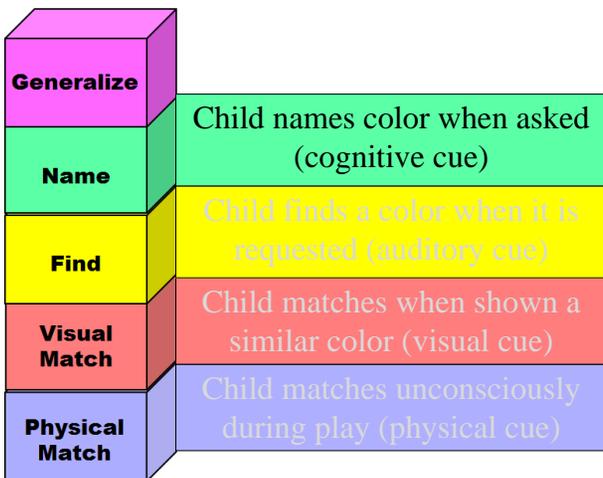
At the **Name** level, children develop the ability to recognize colors at the cognitive cue level. When asked the color of the object, they can pull the name from their own memory with no adult assistance and say it for you.

Continue to provide opportunities for the child to name colors. Once they have shown they know this skill, though, back off from that type of demand. Many children get tired of being asked "color questions" over and over and will eventually refuse to answer or reply incorrectly just to shake things up. So, provide the practice they need without fatiguing or frustrating the child.

Generalize — Child can understands shades, light/dark, etc (cognitive cue)
Name — Child names color when asked (cognitive cue)
Find — Child finds a color when it is requested (auditory cue)
Visual Match — Child matches when shown a similar color (visual cue)
Physical Match — Child matches unconsciously during play (physical cue)
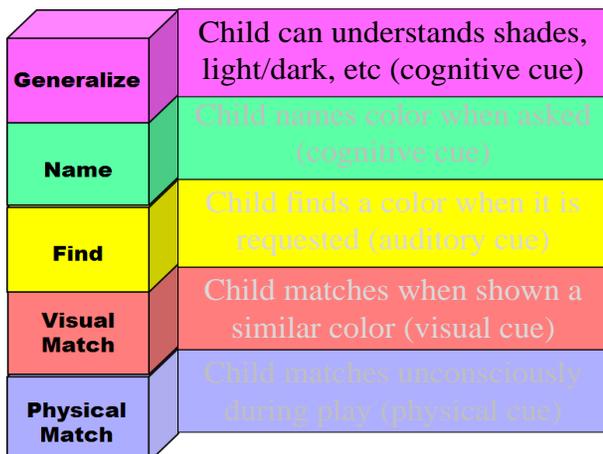
The Name level is often rapidly followed by the **Generalize** level, when children develop the ability to see gradations of color (light blue, dark blue), color mixtures (i.e. green-blue) and continuum of colors (green-blue versus blue-green). The same practice/questioning cautions cited in the Name level also apply here. Sometimes we ask these questions too much and the child learns to "not" respond out of irritation.

Creating the Higher End of a Sequence (Example: Bead Stringing)

The opposite end of the sequence, the higher end, brings challenges as well. We have to realize that many of our students have been in formal educational experiences of some type since infancy. This means that they have seen the same toys, often for years, and they may know them so well that they have become boring. So, we have to begin to understand how to extend sequences upwards to recapture interest. Take a look at a simple example, bead stringing.


First, realize that you can modify bead stringing by understanding the three variables associated with the task.

The first variable is the degree of **Eye/Hand Coordination** required to get the string through the hole (accuracy). Just looking at the beads informs us about that aspect of the task. Some holes are wider and others more narrow. Sometimes there is more than one hole, and this increases the success rate (miss one hole and maybe hit another). This is an easy variable to visually see and understand.

Less noticeable is the second variable, the degree of **Stabilization** required to get the string through the hole. The stabilization required varies with the thickness of the bead. A very thin bead requires little stabilization because the string goes through immediately and can easily be caught by the other hand. A very thick bead requires more control to guide the string far enough through so it will poke out the other side. This variable is one that is barely noticeable by most children, but for a child having difficulty with fine motor, that width of the bead can make all the difference in the world!

The last variable is the degree of **Two-Hand Coordination/Ability to Cross Midline**. This variable involves the "string" being used. If it is non-bendable, the task is easier. Use something non-bendable on the end (i.e., a plastic needle or reinforced tip) of a flexible string is a bit more difficult….but much less difficult than strings with no stiffened end. It is important to note that this variable must be viewed in light of the other two bead variables. How all of these factors interface with the child's abilities will determine the appropriate play material and sequence for that individual child.

Create the Lower Levels!

Moving from one-handed to two-handed bead stringing

Know that you may need to adjust this sequence a bit since there is a big leap from using a dowel rod to a piece of yarn. I would often transition children from the wooden rod (the lowest commercial level) to a string by using a pipe cleaner. If you tape it to the table and use a short length, it is very similar to that wooden rod. Lengthen it (but still keep it taped down), and the child will have to begin to stabilize the pipe cleaner with their other hand. Eventually you can release the pipe cleaner from the table and use it in that manner. This will transition them right into a true (albeit, very stiff) string. This is an easy fix for children needing those smaller, in-between levels of string that are not typically available commercially.

As you can see, you easily can adjust this skill up and down, but what about the stringing action itself? How do you make that more complex? Here is one lovely example from some commercial materials I used long ago (Learning Resources Inc., 1985).

In this set of cards, the bead stringing task is made more complex by changing the cue presented. The sequence they used can be seen at the right and is a lovely way to increase the complexity of this play.

Now, let's go one step further. We will adjust the sequence of the stringing task in another way. The example at right is perfect….it expands the bead stringing of a single string, but it is still rather simple, especially for a child who has been stringing beads for years. In light of this, we will

Some type of color coding. Eventually adds in different shapes

Color coding removed so child must rely on shape only

Simple masking of shape with additional symbols

Moderate masking of shape using a symbol overlay

Complex masking of shape using shading of symbols

explore increasing the complexity of the skill using multiple "layers" of the task. Now, THAT is something that will keep even the most advanced child busy for quite a while. This is how that play expansion would occur:

Single String

Multiple Single Strings

| Multiple Single Strings that Combine **AND** Separate |
| --- |
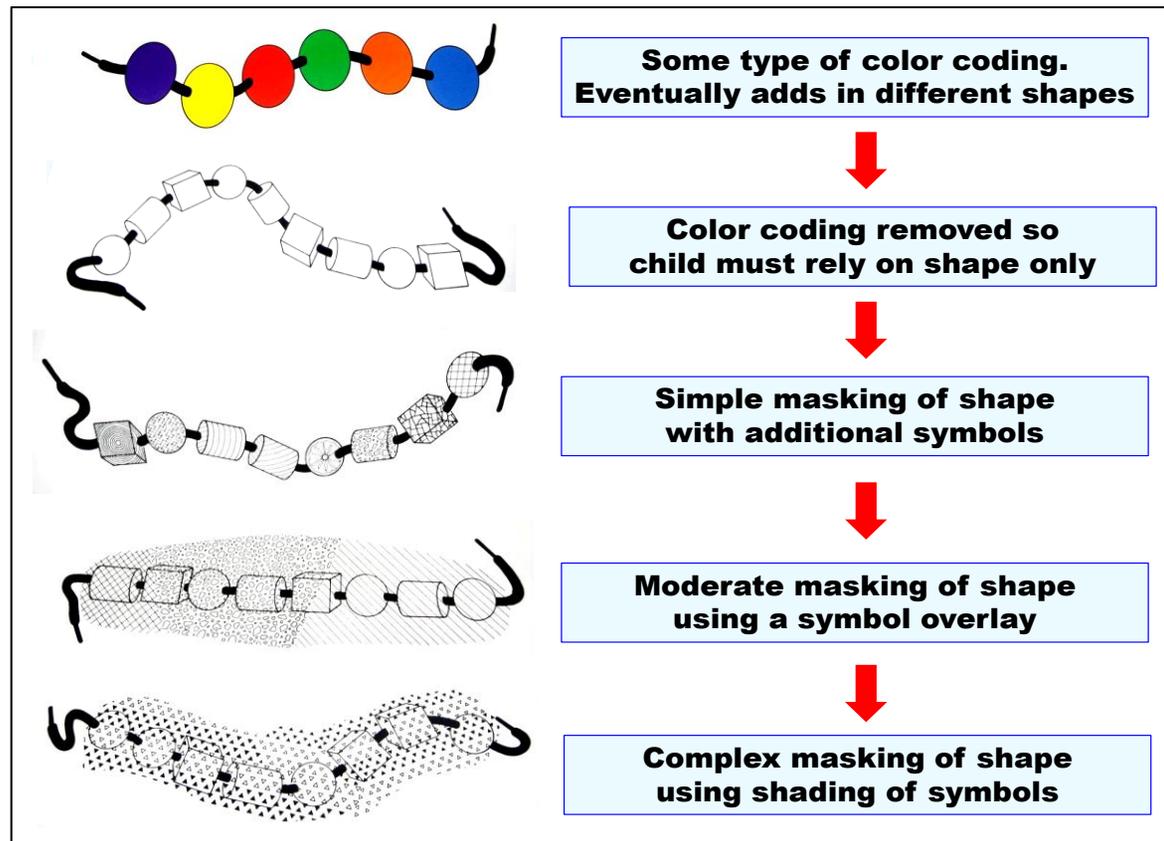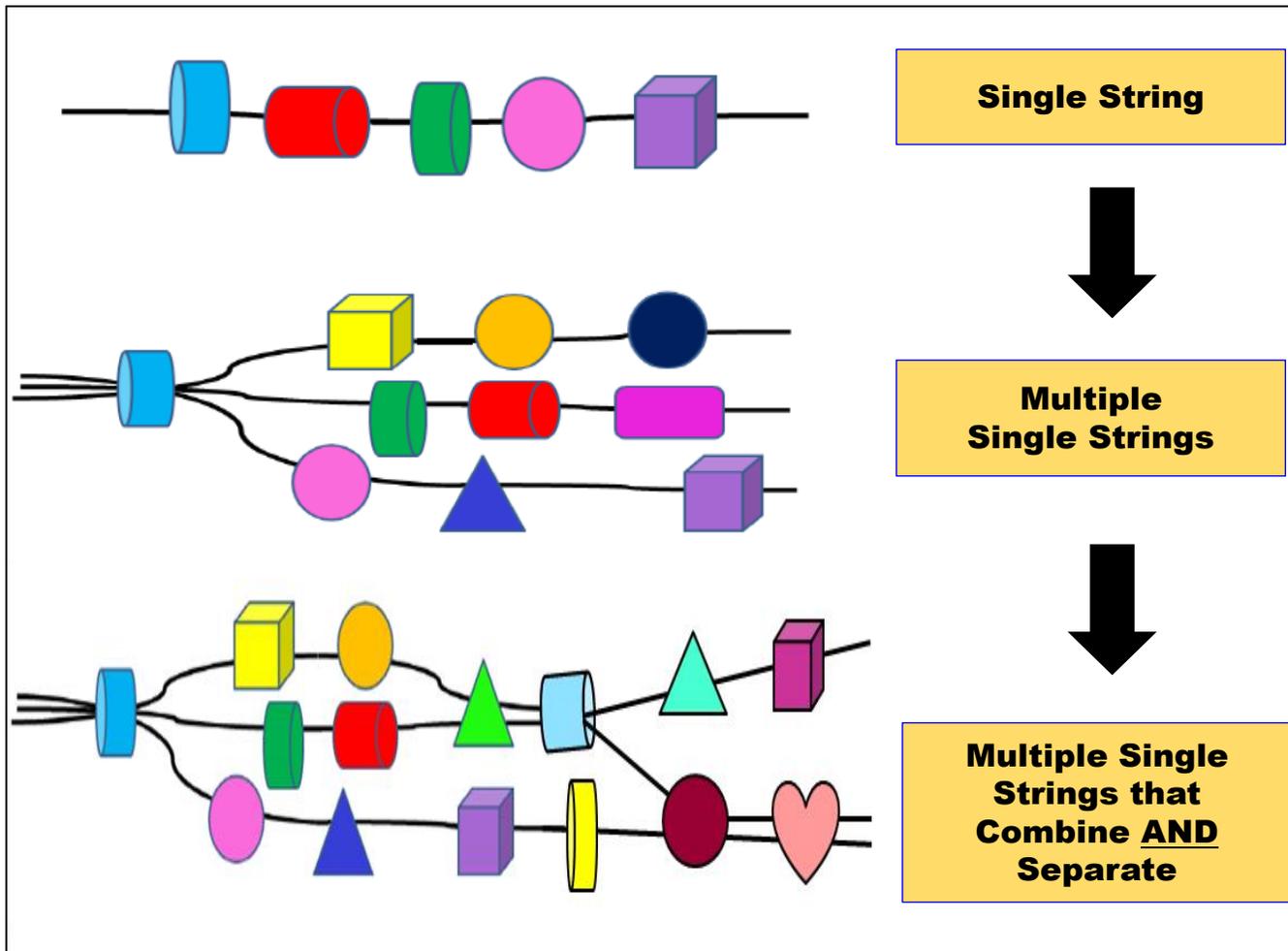
By adding additional strings, we can make the task increasingly complex. Just managing two or three single strings at once would be a challenge for most children, but if that is still not high enough of a skill, you can always begin to move back and forth between multiple strings. The degree of variation will determine the challenge provided, but it is definitely a task that will keep a child busy for a long, long time! Since I have yet to see these pattern cards created commercially, you will need to make your own….simple enough using a camera and your own string and beads.

Once you reach this level (managing various strings in various configurations) the child can be moved into related tasks involving weaving, a skill that used to be taught much more completely than it is today. That lovely skill of weaving not only targets fine motor skills, it is wonderful for conceptualizing symbolic patterns, a skill that is used over and over in geometry and math. We have lost the understanding of how to target these math and science skills through the play and the arts, and we must recapture that knowledge. It is a topic that will be extensively explored in the section titled, *Reclaiming Forgotten Knowledge*. That section can be found at the end of this manual on page 88.

Expanding Commercial Materials (Example: Stone Soup Story)

As we could see in the last couple of examples, hitting this level of play expansion in a diverse classroom require some thought, and at times, some teacher-created materials. Even when a commercial set provides a lovely sequence, with a little creativity, you can expand it even further. Let's look at an example from *Lakeshore Learning Materials*, but first, we should quickly remind ourselves about the visual cue sequence (at right).
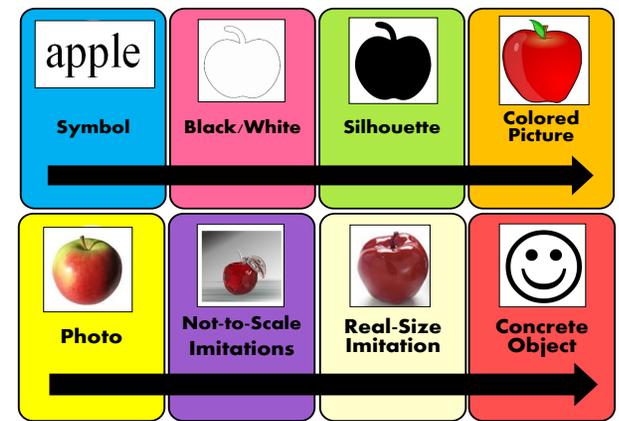
This example uses a story set for the book titled, *Stone Soup*, and oldie but goodie. The book alone would use the symbol and colored picture level of the visual cue sequence. Pretty straight forward…

The Lakeshore Company then did a lovely job of expanding the cue sequence downward by including a set of real-size imitations with the storybook. These play stones, ladles, vegetables, etc. Allow the child to interact with the story on a whole new level. The opportunities for dramatic play and others forms of activity are endless----absolutely perfect!


I am sure you have made the leap already, but the obvious move downward is to replace some or all of the imitations with real objects. The younger the child (chronologically or developmentally), the more likely you will need to make this type of adjustment. This one was easy because it was already partially constructed for us---how I wish more companies did this. It makes creating the lower levels very easy.

But not all commercial materials begin the process for us. This means we will need to rely on our own understanding of the sequences and enough creativity to make what we need. So, let's take a look at an example that is not so obvious.

Many teachers have materials in their rooms that they rarely take out because they are too complex for the children in that room. Sometimes there are no solutions, but in other cases we can make adjustments if we just think the sequence through for a minute. Remind yourself about the visual cue sequence and then let's look at this spinner board game.

A board game would typically be played using cue cards or pieces at the colored picture level. It would be easy to bring this down to the photo level by just adding additional card that use photos of the objects instead.
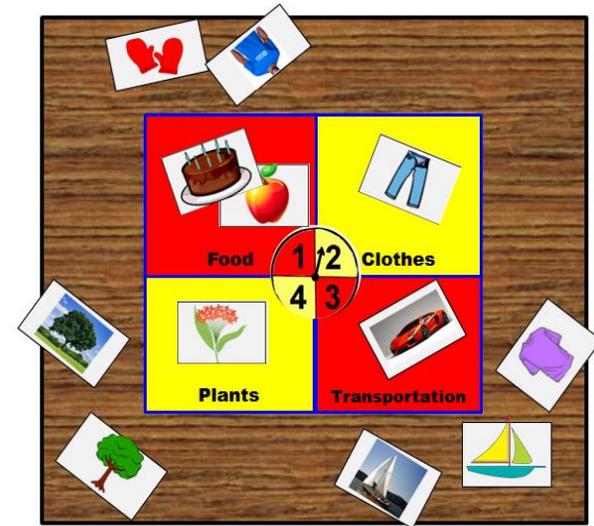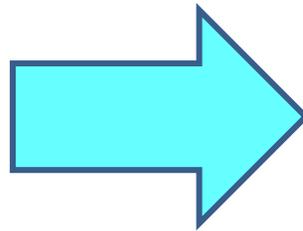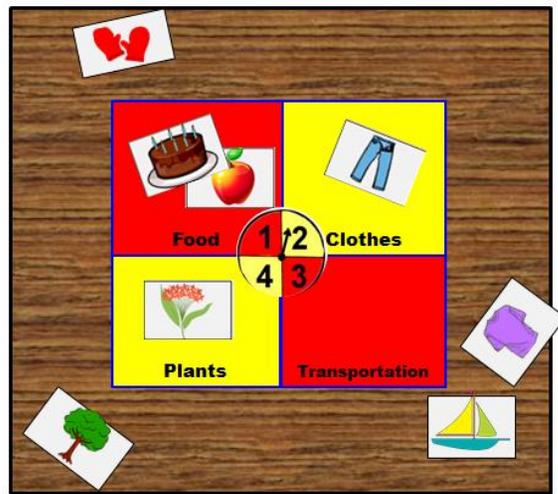
That 2-D level is easy to conceptualize and create, but what about the 3-D level? How can we begin to bring in objects?

The easiest way is to take that game board and extend the sections out on a flat surface using masking tape. This can be done directly on the table or on the carpet. Now, you have a larger space that will accommodate the use of those objects. Some children will play at the 2-D levels (using the colored picture or photo cards) and others will use the 3-D objects. You will actually see the children transition from the 3-D to the 2-D over time…a fun thing to watch. This is a simple way to expand the scope of a game that is narrow in design. It can't always be done, but it is definitely something to attempt when you can!
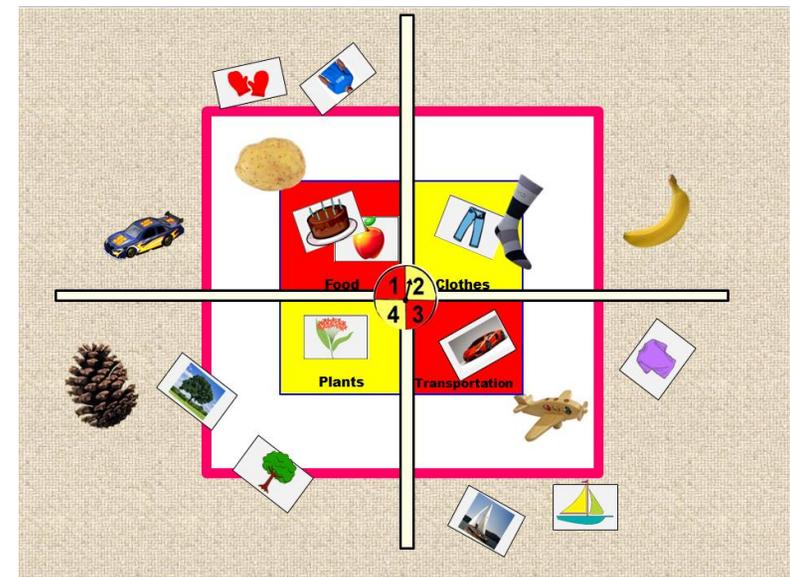
Using Sequences to Teach Rote Skills (Examples: Handwriting Strokes, Spelling Words & Math Facts)

Before we move into targeting skills in a more formal manner through play, one more thought on embedding play into daily activities, this time for the older child. That can often be a difficult task, especially when you are faced with having to teach lessons on rote tasks that appear to be far removed from any form of play. Here are just a few examples that might inspire some creative applications for this age group or this rote type of skill:

MATH FACTS
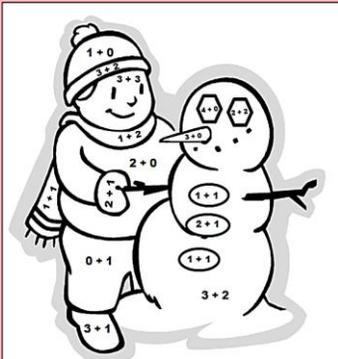
When children add simple math facts to a coloring sheet and create a coloring key, they will repeatedly say the math facts to themselves.

When they exchange and work each other's sheets, they will get even more practice.

SPELLING
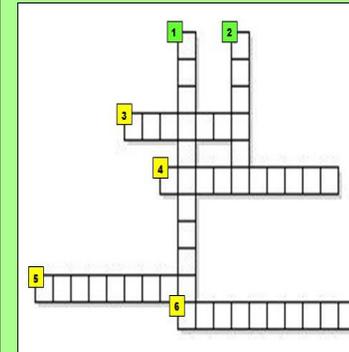
When children create their own crossword puzzles, they will spell the words over and over as they try to get them to fit.

When they exchange and work each other's puzzles, they will again spell the words repeatedly.

WRITING STROKES
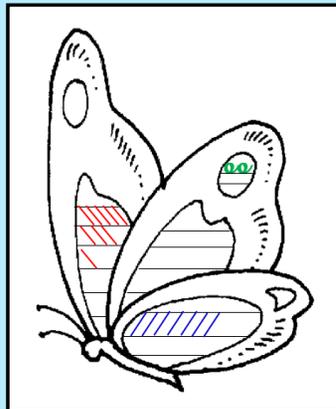
Create a coloring sheet that has lines for writing.

Have the children fill in sections with different strokes using fine-tip colored markers or colored pencils.

Have them create the strokes as close together to fill in the color as completely as possible.

Using Play to Target IFSP and IEP Goals (Examples: Wrist Rotation and Movement Planes)

Let's move on to targeting special education goals. Most of you are familiar with this type of demand, and I don't want to bore you. To keep it interesting, I will provide two examples for the youngest age group (toddlers) to show you how far you can take this embedding. I am sure you will also be able to generate new and creative ways to meet the needs of your own children and their individualized special education plans.

The first example is being used to target a child's ability to move through various planes of space, specifically moving from the floor, through some form of upright kneeling to standing. This game was designed to embed opportunities for this movement pattern into a turn-taking game. The game involved peek-a-boo using window clings, in this case autumn leaves. The leaves were purposefully placed in locations that would encourage a certain posture in the child (e.g., laying on floor, kneeling, standing, etc.). By skilled use of the game, a teacher can give the child practice in the movement skill or direction needed (i.e. from kneeling to standing versus standing to kneeling). It's lots of fun and definitely useful for targeting this educational plan goal.
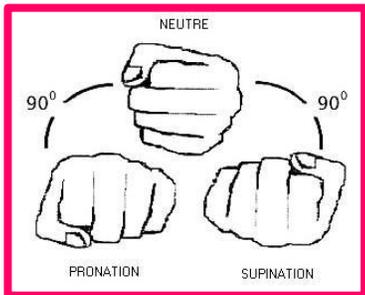
The second example uses the targeted skill of grasp and wrist rotation. This child loved art, so the back was removed from of a piece of contact paper and taped to the table (so the child did not have a two-step task of glue on paper and then placement….there was only one-step task, "place item on paper"). The collage items consisted of very stiff papers that were twisted in various ways to encourage the different wrist rotation and finger grasp patterns. The pieces were placed wide apart on the table to discourage grabbing. In this way, a simple toddler art activity could target a specific therapy goal. To the uniformed eyes, it looked like any other tabletop art activity, one all children could participate in, but it had a very specific goal in mind! If you want additional ideas on this topic, just look on the internet. I am always astounded by the wonderful approaches I see from professionals and therapists who are much more creative than I am ☺

Tricks of the Trade

Embed Sequences in Teacher-Made Materials (Examples: Build-a-Man Puzzle)

Obviously this type of practice takes preparation, and that in turn means TIME. Here are a few tricks I picked up long ago when working for the Early Recognition Intervention Network (ERIN), a lovely old program that did amazing things with skill differentiation. Look at how they leveled this simple learning center (body puzzle) by moving through the various levels of the visual cue sequence. The puzzle was created using an orange folder. By placing a different level on each of the four sides, a game was created that could target various needs….just turn the folder to the right side for that child….

| Colored Picture Level | Black & White Line (Simple) | Black & White Line (Advanced) | No Visual Cue (Cognitive Cue) |
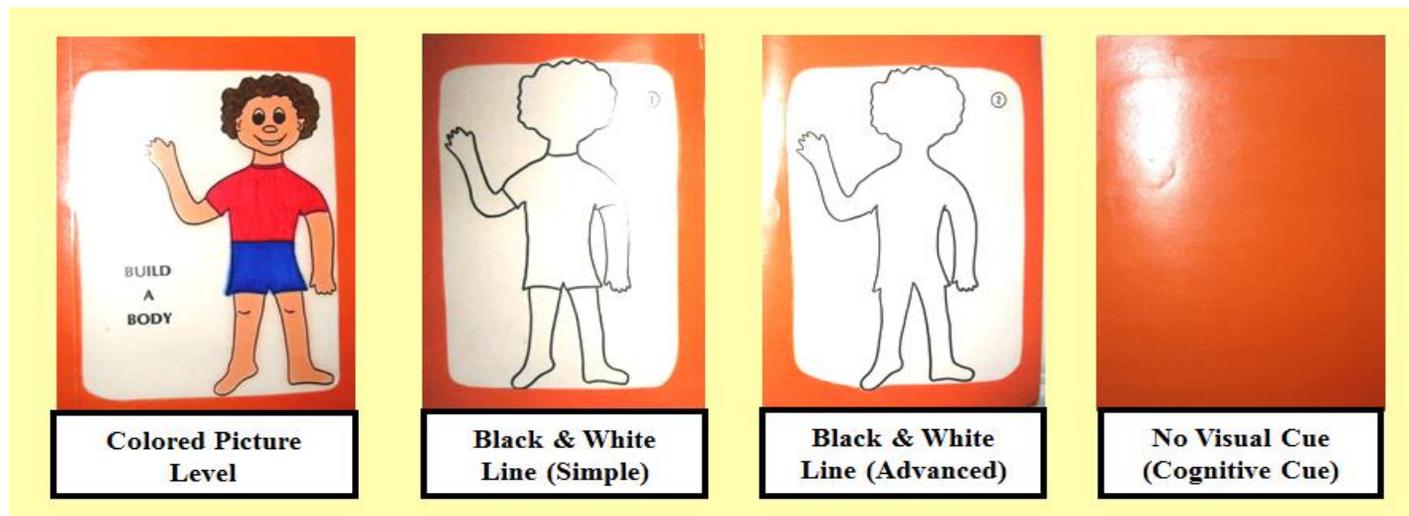
….and then by leveling the number of pieces as seen to the right, additional levels of simplicity and complexity could be added. Even more levels are created if spinner boards are added and the task becomes a game.

Using this approach, teacher-made materials can be made multi-purpose and appropriate for a wide number of students. Definitely a great goal when you have a diverse classroom and limited amounts of time. Embed the various levels in the material itself, and its use is greatly expanded.
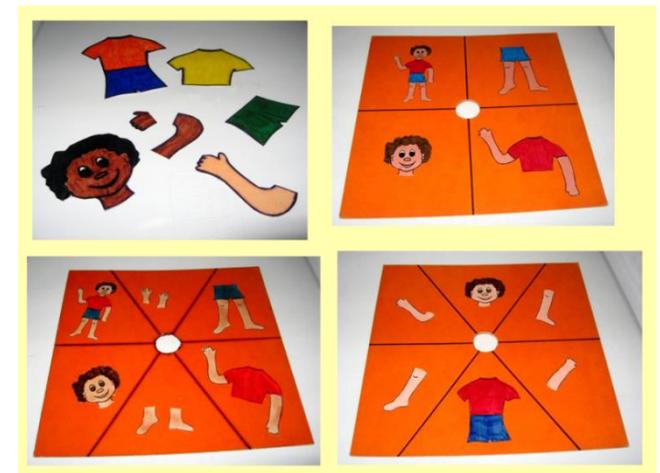
Using Value Code Shifting to Enhance Motivation (Examples: Addition & Fractions)

While you are in the process of creating materials, it would be lovely to keep in mind the concept of value code shifting. This approach uses a desired personal goal of the child as a teaching and motivation tool to help a student learn a specific skill or behavior. You can read much more about this technique in the manual titled, *Value Code Shifting: Reaching the Hard-to-Reach Student* on this website. Meanwhile, here are two examples of how a personal code value can be merged with a play theme to teach a specific skill. It is an invaluable approach when a child is struggling or lacking motivation.

Child is learning simple audition. The child has an interest in becoming a race car driver.

The first example uses play cars and a "road intersection" (perfectly replicates the shape of a + sign) in the block center. The cars have a gigantic accident in the center of the intersection, and the total number of cars involved needs to be recorded for the "insurance report" (meeting the child's interest in cars). Number cards showing the equation can be color coded to the match the color of the cars being used (2 blue cars + 1 red car = three cars damaged). It is not necessary to use this type of convoluted approach all the time, it really isn't possible time-wise, but if a child is having difficulty with a skill or is reluctant to exert effort, a small fix like this can be wonderful.

$$2 + 1 = 3$$
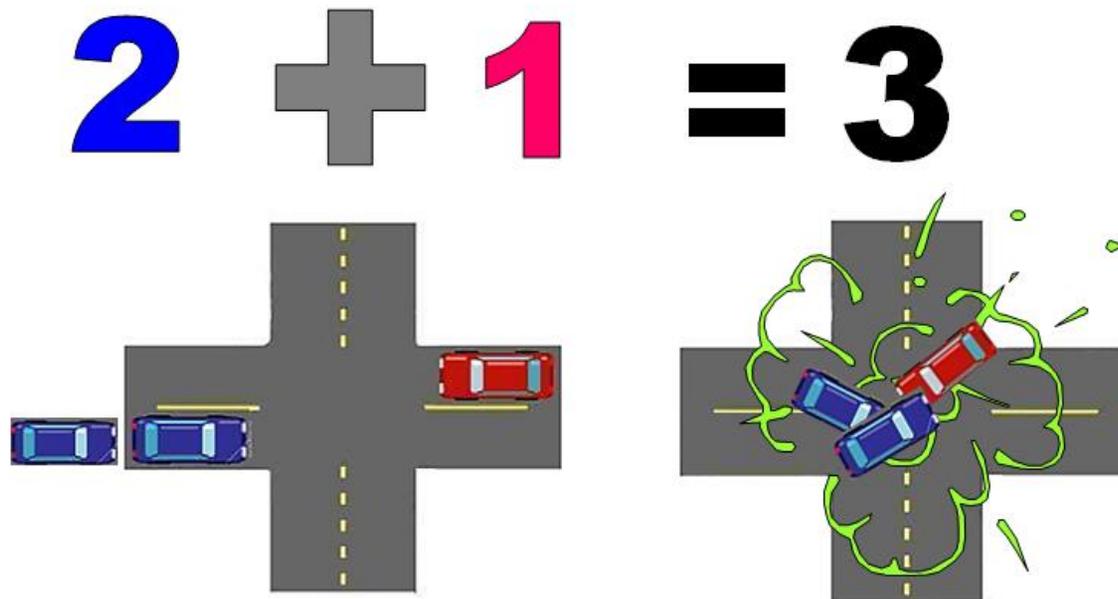
Child is learning basic fractions. The child is not motivated by academics but feels strongly emotion for his mother.

The second example uses colored circles that are separated into fraction segments. These are then cut apart and pasted to a central circle to create a flower. The flowers were then arranged in a vase and given to his mother for Mother's Day. When I first ran this, I actually embedded it into a social studies unit on Japan, integrating the social studies topic with the math concepts learned earlier that day. The goal was to provide a hands-on visual for all children (who could give the bouquet to anyone they wished), but it was purposefully chosen to also entice this reluctant learner who would "do anything for his mother" into exploring the math concept he had been struggling with (and avoiding) the previous week.
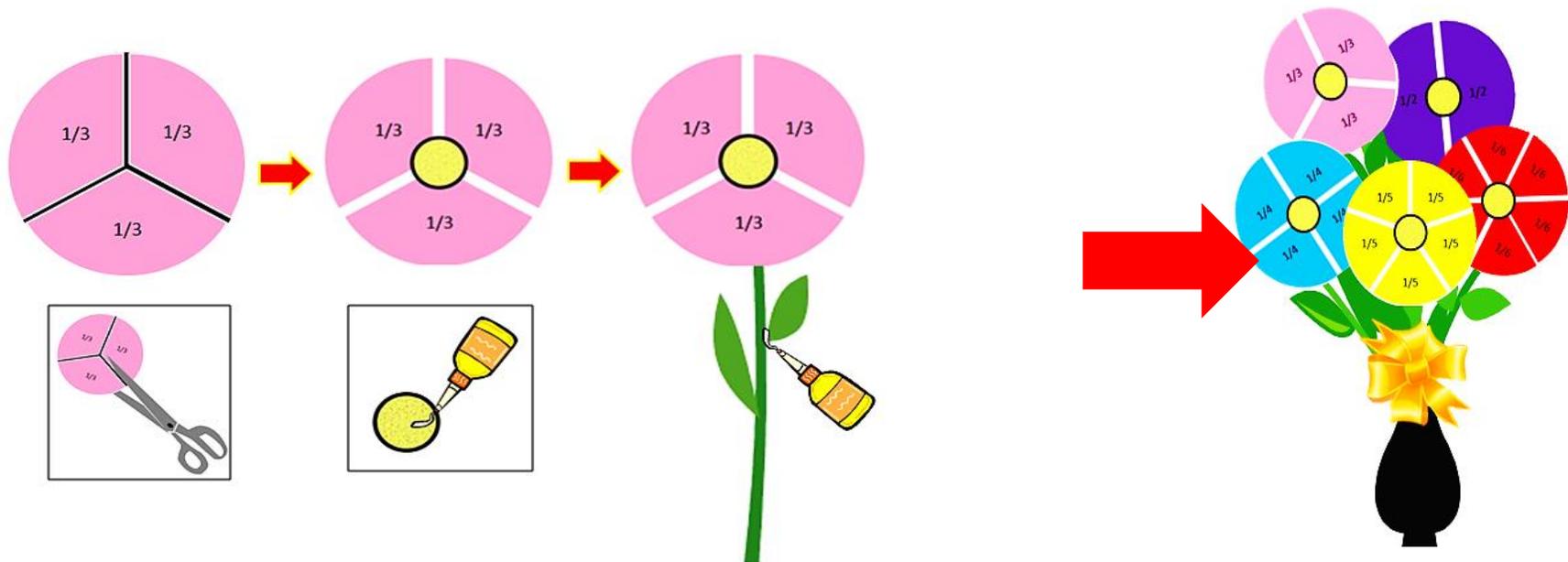
Again, it is not always possible to *value code shift* every concept, activity, or skill, but if you have a student who is really struggling, this can help. The added bonus is the hands-on experience associated with this type of activity is beneficial to every child. I have to say that after lessons like the one above (and a couple sessions on origami using the same "fraction" concept), all of my students, including the targeted child, REALLY understood fractions at a level far beyond previous groups. It was so beneficial that it became part of my teaching bag of tricks long-term.

You Can Teach Anything At Any Level (Examples: One-to-One Correspondence & Gravity- Toddlers)

How far can you go with this? Well, the one thing that CAN hold you back is a limited understanding of the developmental sequences and how they extend from infancy up into high school and beyond. If you can construct that sequence completely, then you have the ability to conceptualize activities that will teach the skill through play to even the youngest of children. Just look at these two examples:

Teaching a basic physical understanding of gravity to toddlers

Attach soft Velcro fabric to a vertical bulletin board and corresponding Velcro loop pieces to plastic bowls. (I used the old hosiery "eggs" when I did this…gosh is that dating myself…LOL) You then should have loose pom-pom balls for the children to place in the containers.

Turn the containers different ways (by placing the Velcro in a manner that forces a certain placement) so the child can experience when the balls will fall and when they will stay put. Make sure to use various degrees of tilt so the child can see how some tilted containers hold lots of pom-poms and others can only hold one or two. Also make sure to have a container turned over in such a way that *no* ball can remain inside.

I have watched toddlers try again, and again, and AGAIN until they finally realized that the ball would not stay in a container in that upside down position! Talk about learning the concept of gravity in a hands-on manner ☺

Let's look at one more example to show how a very advanced skill (one-to-one correspondence) can be taught to even the very young. Of course we can always use the old "one napkin to each child" approach, a great lesson, but it doesn't necessarily visually teach the concept as a whole since there are usually too many children for the child to track the whole process. Here is another way to target this skill----one of many, I am sure!

Teaching one-to-one correspondence to toddlers

Place a bead or peg into each space of a muffin tray. In only one section, place **two** items. Do not leave any empty spaces as illustrated at right.

Most little ones will immediately notice that there is one "too many", but before they fully understand the idea of one-to-one correspondence, they will usually try to solve the problem in a hilarious manner. They will repeatedly remove the extra bead with one hand and make room for it by taking out bead in another section with their other hand to get an empty space. They then fill that space with the original "extra piece"...but this leaves them with a *new* extra bead in their other hand. So, they repeat the action. They remove another bead and replace it with the one in their hand---and STILL have one left in their other hand. It is too funny to witness!
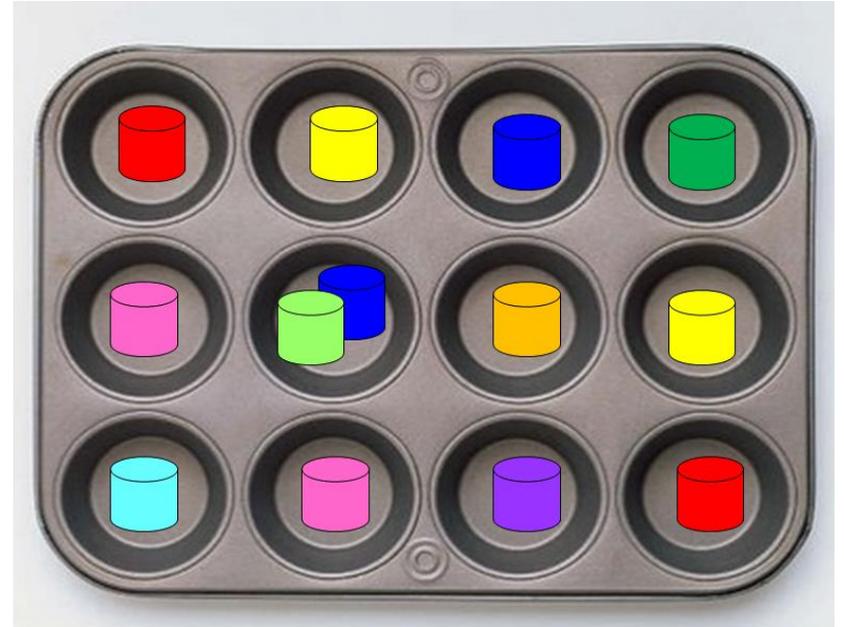
Eventually they have an "aha" moment and realize that they will <u>always</u> have one too many beads no matter how often they switch them. At this point they either give up, or in the case of the first child I ran this with, Rachel, throw that extra bead away to get rid of it. Actually, in the case of Rachel, she threw it across the room! After that, every morning without fail, two-year-old Rachel would come in, go to the dramatic play area, open up the stove, and take out the muffin tin. She then immediately threw out the "extra bead" and then went on with her life. HOW I wish I had that little one on film doing this---LOL. Regardless, the rule is you can teach virtually any skill at the lowest age levels. You just need to conceptualize the full developmental sequence and then teach that lowest level through play. I will be exploring this concept more fully in the new math and science module on the website.

It is clear that there are many, MANY ways to enhance play in a general manner. So, what about using play as true intervention? How should this be approached? Let's begin this all-important section on play-based intervention with a simple technique that is appropriate for a good number of typically developing students in today's modern classroom.

Basic
Play
Interventions

Linked Play (Increasing Symbolism & Dramatic Play

This next technique is a simple one that is used to enhance dramatic play/symbolism (a precursor to literacy). We seem to be having difficulty with this form of play in the modern classroom. Maybe due to the electronic toys? Either way, I think you will find the information interesting…

The basis of the technique centers on the visual cue sequence. If we apply this sequence to dramatic (symbolic) play, it is easy to understand that a child can play out a theme at many different levels. So, if a child is pretending to cook, they can complete that story scenario physically with their full body and real-size imitations or concrete objects in the housekeeping center, but they can also play through that same sequence using miniatures and action figures in a toy house set. Moving up the visual cue sequence to the not-to-scale imitations requires the child to be able to superimpose their actions on the little toy figure that is being used to represent their thoughts, definitely a higher level of symbolism.
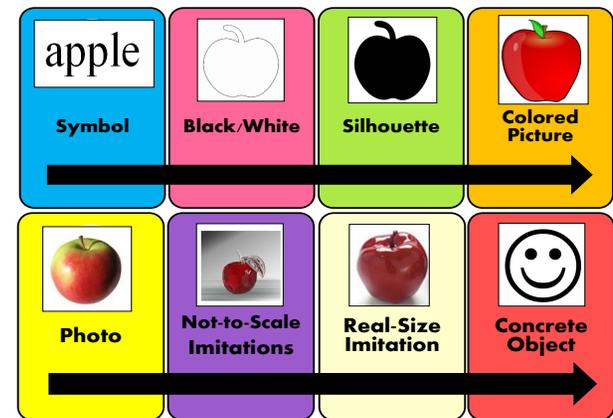
In a similar manner, superimposing your actions over a 3-D miniature action figure is less complex and symbolic than trying to act out that same story scenario with a flannel board figure that is essentially almost two-dimensional (e.g., making the flannel figures talk to each other). Now that can be challenging! The main thing to realize is that many children are not as adept at this skill as children from previous decades, but we CAN teach it to them with just a few casual adjustments in the classroom. The technique is called *Linked Play Intervention*. In this approach, you basically assist children in transferring their full-body dramatic play to the use of miniatures (action figures) and then eventually to that quasi 2-D level (i.e. photo, colored picture, silhouette, or black/white line). From there, you can add sight words and other literacy-based supports that move them gently into true language-experience activities.

The transition from the 3-D miniature level to the 2-D level can be a challenging one, many children just want to place the items (i.e. make pretty pictures) rather than use the items in a dramatic play manner. This is one area where value code shifting to the child's interest can really help motivate them to try and act out an actual story. Here are a few ideas of combinations that can try. Please note that garage sales and eBay might help you find some of these old toys!!!

Linked Play Works with any 3-D + 2-D Combo

Magnets

Colorforms

Paper Dolls

Flannels

**Visuals
(i.e. movies)**

E.T.
THE EXTRA-TERRESTRIAL

WHEELS ON THE BUS

Illustrated by
Sylvie Kantorovitz Wickstrom
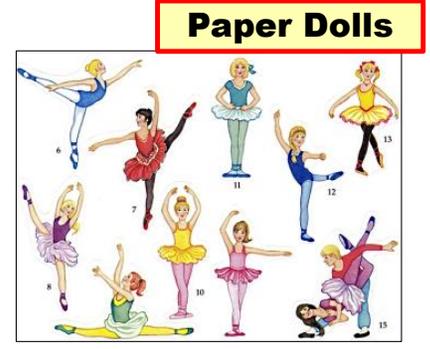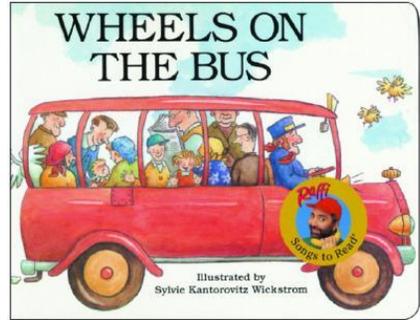
**Link to advanced
2-D materials
(i.e. books)**

From any dramatic play sequence, it is then just a short step to actually writing down that sequence, first with sight words, and when older, with sentences. This is how paragraph writing develops. We can greatly assist our children in establishing the foundation for this skill if we help them learn to easily generate these plays scenarios in their mind.

Our birthday party script.

store   bake   cake   party

If this idea intrigues you, make sure to read the booklet at www.Neuro-Teach.com titled, *The Missing Visual Cue Sequence: Solving Literacy Problems in Modern Classrooms*. It will be provide a more in-depth explanation of this concept and the step-by-step sequence to use it, both casually and as a targeted intervention.

Managing Weak Play in Open-Ended Areas

As I just mentioned, many of our children lack the ability to play well. They may play "long", but the depth of their play is limited, and their ability to generate ideas for play scenarios is over-reliant on pre-existing visual cues (e.g., cartoons, movies, video games, etc.).

This has a direct application to a child's ability to manage open-ended materials that do not readily suggest a usage or play theme. These open-ended areas (e.g., blocks, water, and sand) require quite a bit of creativity, and because the children are unable to generate ideas on how to the use the materials on their own, they tend to become rather aggressive with those toys. This is why these classroom areas can be so challenging to control.

Even the best behaved child can struggle with behavior when using open-ended toys like puppets or water, so if this is a problem in your room, rather than just close those play areas or ban those toys, adjust them a bit. Our goal is to scaffold the play environment so the children do not have to operate totally on their own. It is rather easy to do once the concept is explained, and many of us already use some of this already through teaching intuition.

Since this concept quickly moves into techniques for aggressive play, there is a full booklet created on this topic at www.Neuro-Teach.com titled, *Reducing Aggressive Play*. It discusses "fluid" toys and shows how to scaffold their use for different play skill levels.

Meanwhile, here is an example of how just such scaffolding might be created for water play:
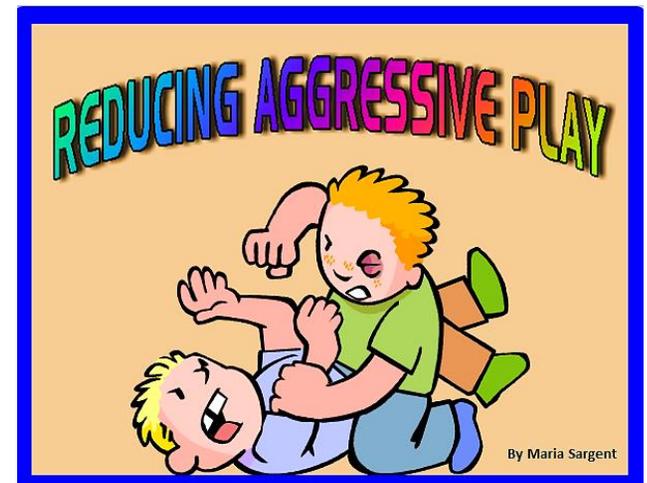
Only water
Probably not a wise idea in most room ☺
Requires high intrinsic control...

Unusual Open-Ended Props
Items like tubing, etc. require quite a bit
of imagination and intrinsic control.

Known Open-Ended Props
Items child has seen before. Moderate level
of control needed because open-ended.

Known Props
Items that are known by the child
and lend themselves to use with water
(i.e. washing items)

Linking Play with Academics (Example: b, p, d & q

The last example of a general play enhancement will involve the integration of play with an academic skill that seems far removed any form of toy. It is just one example of how far you can take your play integration! And, yes, it will involve that visual cue sequence once more ☺

Before you can really link an academic skill with activity, you have to fully understand the sequence that is being taught. Notice I say "sequence" and not "skill". Sometimes when we over-focus on teaching a single aspect of a sequence, we lose the ability to recognize that the skill can be taught at ANY level. When this is misunderstood, you have very well-meaning teachers banning the use of certain objects or tasks and forgetting to replace them with a more age or developmentally appropriate level instead.

Just look at the topic of "calendar". That is one activity that is often banned in the preschool classroom because it is deemed inappropriate for that age child. In most cases, this would be correct; a full-blown "recite the day, month and year" activity using a true calendar would not make much sense to most children of this age, and would be a rote activity, at best. But, is it right to **ban** calendar? This is where we run into problems! Let's take a look at the actual sequence and understand how "*calendar*" can even be taught to infants.

First, we have to fully name what we are teaching---that will help us greatly in creating the full sequence from infancy up to the skill. So, what IS a calendar? Why do we use one? Well, we use it to *measure the passage of time*. Now, that is something that informs our sequence! We can visualize how the passage of time is understood at the infancy level on up through the various developmental levels.

This is what we must do in order to link an upper educational skill like calendar with the activities that would be appropriate for very young children. We will move on to actually do that for the skill recognition of b, p, d, and q, but just in case you were wondering, here is one sequence you can use to teach the passage of time (calendar) from infancy onward…
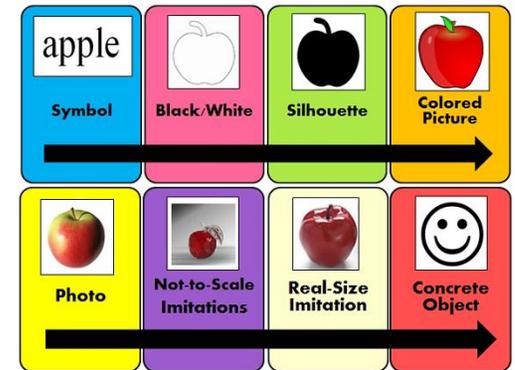
1. Anticipate Time Periods & Environments
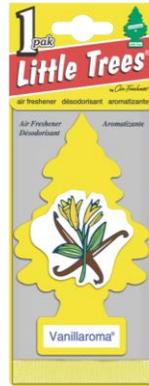
Use sensation, scent and sound to cue different time periods (i.e. lavender, jazzy music and lamb's wool for arrival and vanilla, classical music and satin during prep for leaving).

2. What Comes Before and After Food!
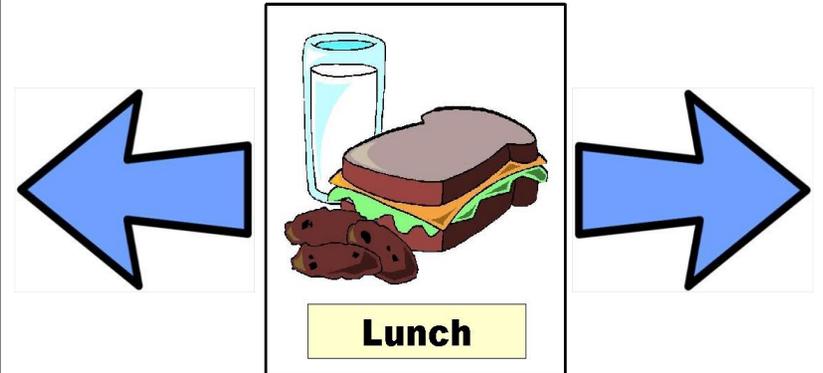
Lunch

Target the time periods/activities before and after snack or lunch. This is the first time period children will notice and remember ☺

3. Track Daily Time with Objects

Circle   Free Play   Story   Lunch   Outside

Use the appropriate visual cues/objects (3-D, 2-D, etc.) to track activities over the course of the day. Review at the end of the class period. NOTE-first section is red, last is orange ☺

4. Track Weekly Time with Objects

Monday   Tuesday   Wednesday   Thursday   Friday

Use the appropriate visual cues/objects (3-D, 2-D, etc.) to track activities over the course of the week. Review at the end of each class period, noting what was done over time.

5. Link Pictures/Activities to Numbers

Use a colored picture (sticker) to symbolize day. Use two stickers, one the child picks and one you pick. Use the same repeated sticker for a day of the week (i.e. Monday is always a book since that is the day the library van comes).

6. Link Colors to Days of Week

When they begin to notice the visual pattern of repeated stickers, introduce the "days of the week" words and highlight with markers each one using a standard color.

7. Link Pages of Calendar to Months

Link having a "new page" to having too many Mondays to fit on the single sheet. Begin to introduce the page names or "months of the year".

8. Full Calendar is Understood

Explain how hard it is to remember all the different "page names" (months) and explain people decided to stop at 12 names and then number each book of 12 (i.e. years).

So, now let's move on to the topic of b, d, p , and q. This is a bit more challenging to construct, so let's start at the beginning again.

There are many ways to analyze a concept like b, d, p, and q. It is a skill that crosses visual and auditory skills as well as many specific reading skills. But what makes the recognition of b, d, p, and q so difficult for some children? Well, that comes down to a visual skill problem for most children (not all). They confuse the direction of the letter symbol, which is a visual <u>orientation</u> skill. So, that is where we will begin!
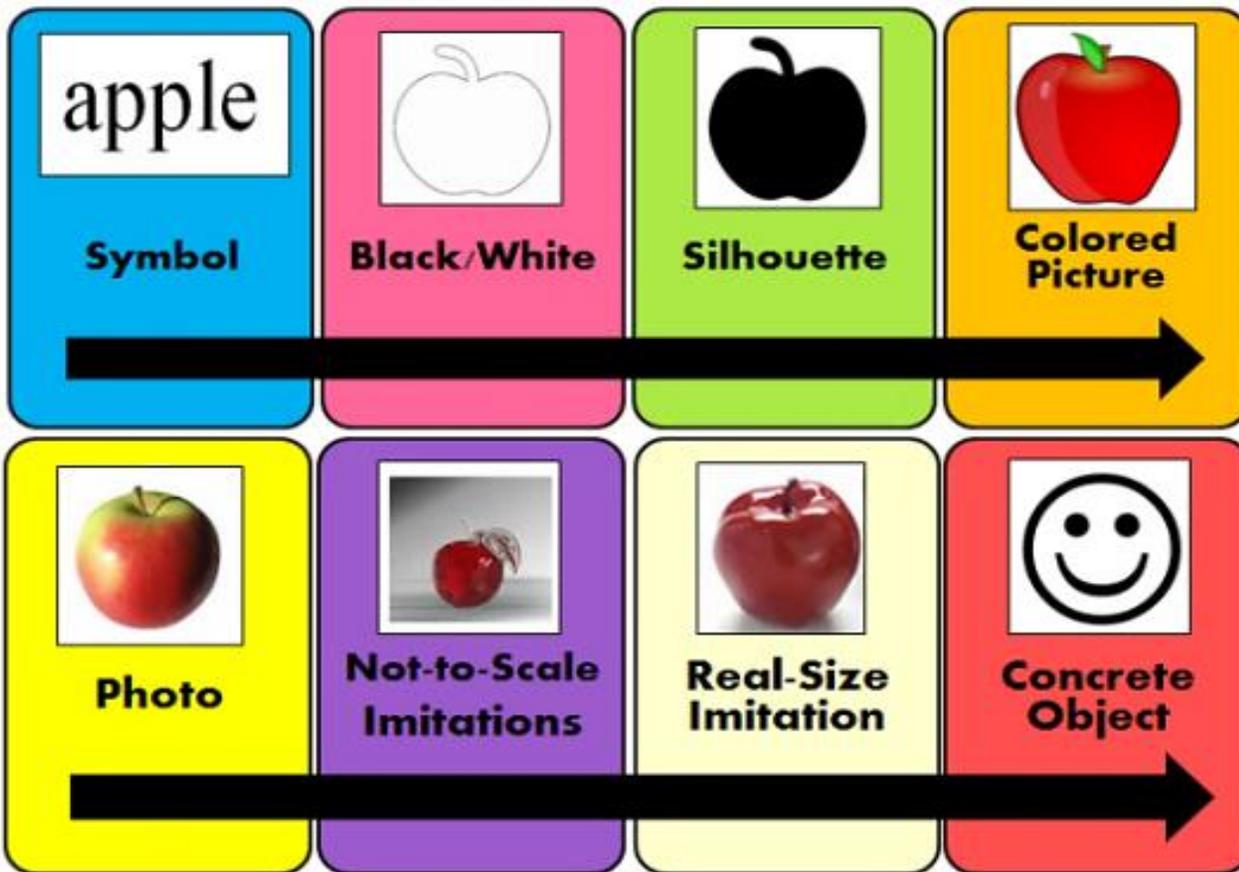
Now, you know what I am going to say---LOL---let's pull out that tried and true visual cue sequence and examine it in light of this skill.

Obviously, this ability to recognize b, p, d, and q would fall at the highest cue level (symbol level).

Now, this is where it gets tricky. It is possible for you to make this task easier in many ways. The most common approach involves using the various levels of the visual cue sequence **to teach the same skill**. It is a wonderful way to go if the child is ready. *Teaching the same skill at the various visual cue levels* would use activities like the examples shown on the next page:

b **d** → apple / Symbol | Black/White | Silhouette | Colored Picture

b **d** → apple / Symbol | Black/White | Silhouette | Colored Picture

…combination of levels

"GET YOUR BAT BEFORE THEY THROW THE BALL"
b
"b" is for ball

"GET YOUR SHIELD BEFORE YOU VISIT A DRAGON"
d
"d" is for dragon

→ apple / Symbol | Black/White | Silhouette | Colored Picture

#1 Create letter by moving total body (gross motor and proprioceptive awareness of total letter form)

#2 Constructing letter from natural objects (more activation of muscles in hand)

#3 Constructing letter with others (gross motor and proprioceptive of letter-strokes)

→ Photo | Not-to-Scale Imitations | Real-Size Imitation | Concrete Object

….PLUS physical cues!

Once you see these examples, it is clear that these are all wonderful ways to teach this skill and include activities that most of us have used at some point or another. But, what do you do if the child still does not understand? Well, most teachers find themselves at a loss as to what to try next….I know I did! I just kept trying to teach my few struggling second graders that skill over and over, often by color-coding the letters, but no matter how I tried cueing it, they continued to struggle. The one thing I did not consider at that time, though, was moving the actual skill itself to a different conceptual level.   That never occurred to me! Let's see what THAT looks like:

b   d

apple | Black/White | Silhouette | Colored Picture
Symbol

...combination of levels

apple | Black/White | Silhouette | Colored Picture
Symbol

apple | Black/White | Silhouette | Colored Picture
Symbol

Photo | Not-to-Scale Imitations | Real-Size Imitation | Concrete Object

SUNY Hand "Reading"

"Read" the slide. ●| left hand on desk
|● right hand   ●|● both hands

apple | Black/White | Silhouette | Colored Picture
Symbol

Photo | Not-to-Scale Imitations | Real-Size Imitation | Concrete Object

....PLUS physical cues. We will get to that in a moment ☺

I am sure you noticed that this time we did not just try to continuously cue the symbols b, p, d, and q in various ways, instead we began to focus on conceptual aspects of the skill that the child may be struggling with, in this case, *orientation* of the symbol. Once you shift away from a narrow view of the concept to be learned and figure out the base skill it involves, a bunch of new approaches begin to emerge. In this case, it became easy to deal with "*orientation*" on many different visual cue levels. We can now use colored pictures, photos (not shown), miniatures, concrete objects (not shown), etc. in games and activities that target that skill of orientation. Which way is the horse turned, right or left? Is the fence by the top of the cow or the bottom? Is the duck above or below the fence? …you can go on and on.

The main thing is we can now see how the other visual cue levels interact with this "symbolic" skill, and that allows us to provide intervention more effectively. It also, by the way, shows us how we can begin to target these skills with age appropriate activities for the youngest of children. So, while it would not be appropriate for most children to work on the orientation of b, p, d, and q in preschool, it is more than appropriate for them to play games that teach orientation using objects and pictures. It is those experiences that will make is possible for them to easily learn orientation of symbols (b, p, d, and q) when older. All of a sudden we can visualize how to take elementary level skills down to the youngest of developmental levels!

Now, that physical cue level (SUNY chart) at the bottom of the previous page---what is that? Well, there are many ways to teach orientation physically. These physical games help children internalize an understanding of orientation through physical movement and include many dance, sports, and general movement games.

Here are just a few activities and the general sequence in which they likely would be introduced (on next two pages). The original idea of using movement in this manner seems to have originated at State University of New York (SUNY), and I then created these activities from there. Fantastic idea they had! These movement games are great fun and really quite challenging for even the oldest student (try them yourself….they are harder than you think ☺) The eight activity slides shown are already created for you, by the way, and can be found on the website in the PDF titled, *Neuro-Break: 180 Brain Activation Activities for the Classroom.* Hope they prove useful!

Neuro-Break
180 Brain Activities for the Classroom
By Maria Sargent and Kara Stewart
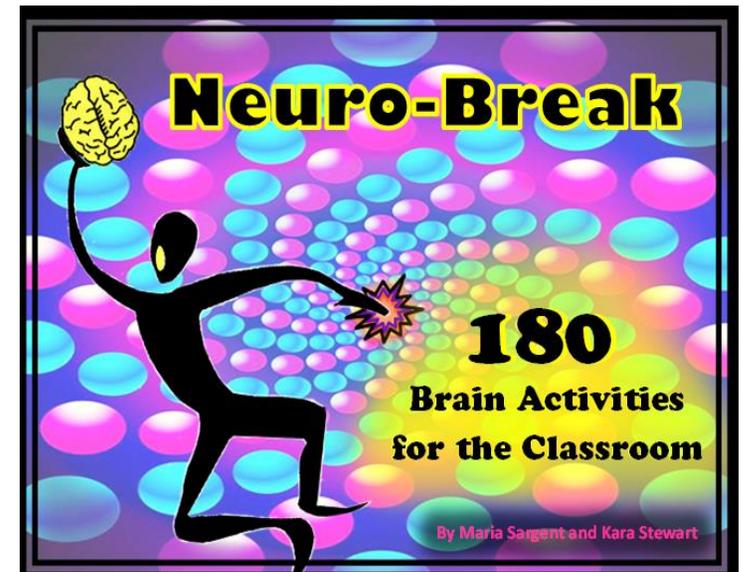
1. SUNY Hand "Reading"
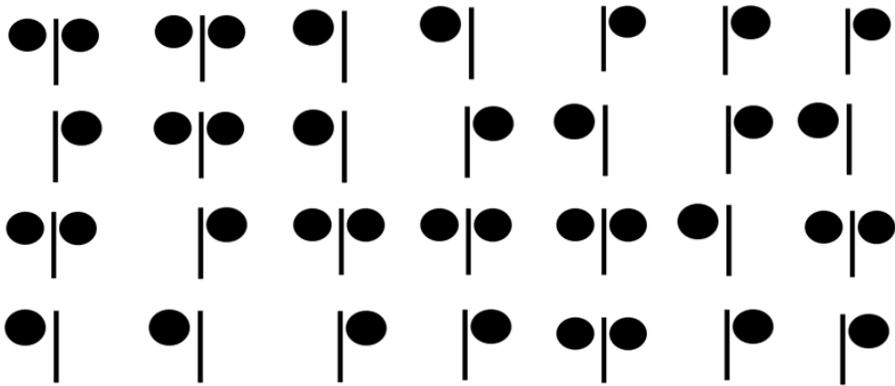
"Read" the slide. 🟨◖| left hand on desk

|◗ right hand   ◖|◗ both hands

2. SUNY Foot "Reading"
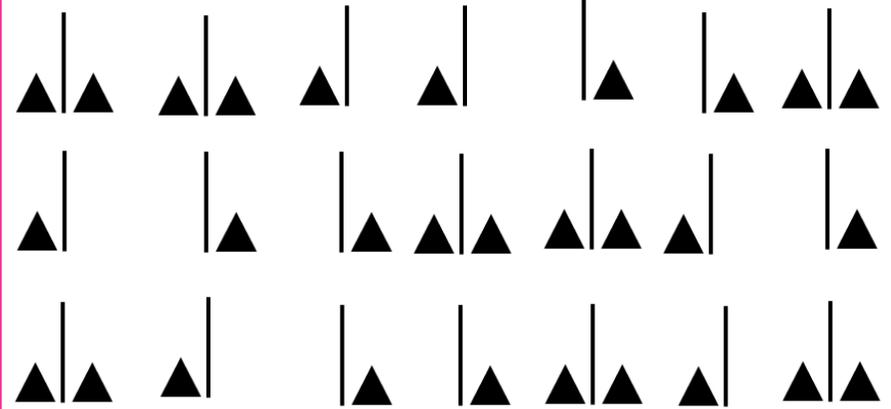
"Read" the slide. ▲| left foot on floor

|▲ right foot   ▲|▲ both feet

3. Foot & Hand (combined)
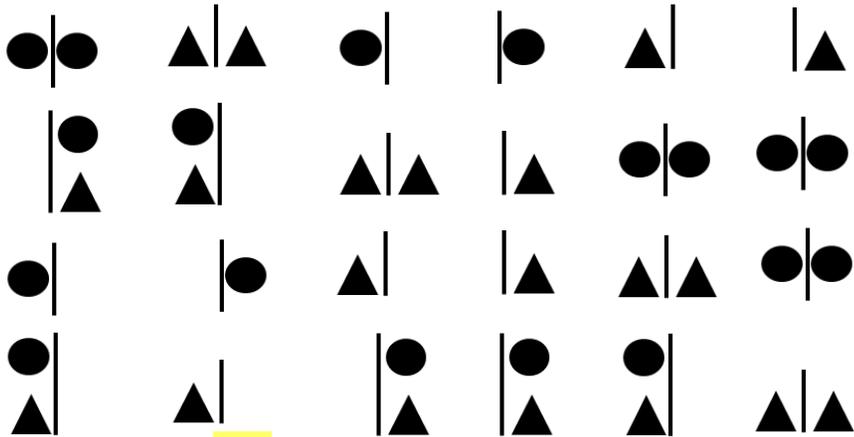
Example: |◗▲ -right hand and foot

◖▲ -left hand and foot

4. "Hand" Letters (colored)

p q p q p
p q q p q
q p q q p
p p q q p
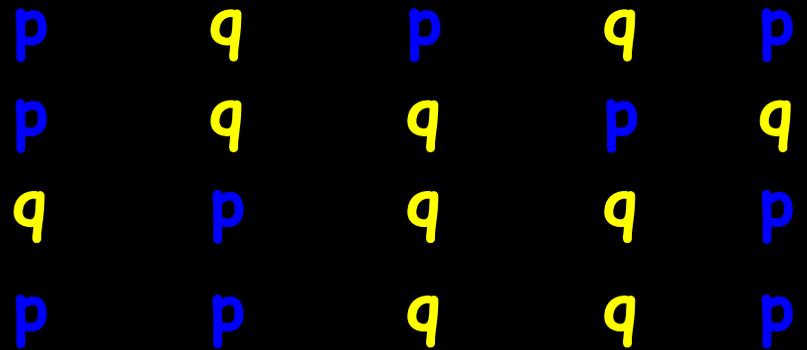
Example: p -right hand   q -left hand

5. "Foot" Letters (colored)

d d b b d
d b d b d
d b b d b
b d b b d

Example: b -right foot   d -left foot

6. Foot & Hand Letters (colored)

p q p q p
d d b b d
b d p q d
p p d b d

7. Foot & Hand Letters

p q p q p
d d b b d
b d p q d
p p d b d

8. Hand Arrows (example of variations)

→ ← ↓ ↑ → ←
← ← ↓ ↑ ↓ →
→ ↓ ↑ ↑ → ↓
↑ ↑ → ↑ ↓ ←
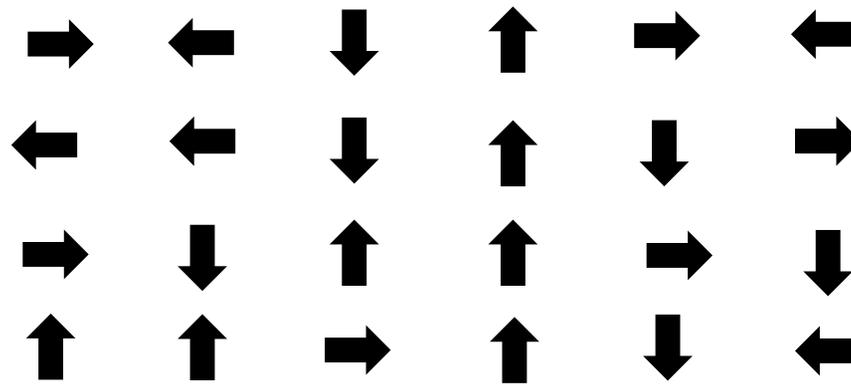
"Read" the slide.   ← point left
→ point right   ↑ point up   ↓ point down

Advanced Play Interventions

Horizontal & Vertical Expansion (Teach HOW to Play)

Up to this point, we have been walking through techniques that use play as an intervention or teaching tool, but what if the child is having trouble with play itself? What do you do then? Well, you may have to actually make play the GOAL of intervention. This may be a casual "let's improve your play skills a bit" enhancement all the way up to actually teaching a child with significant developmental challenges "how to play". We will begin with the casual and easily applied horizontal and vertical expansion to hone our play support skills and then move on to the more intricate methods in later sections.

Before you can begin even the simple horizontal and vertical method of play expansion, you first have to answer a basic question:

That might seem like a simple question, but the answer really isn't all that evident unless you observe closely. The key to really understanding how "well" a child plays is to first remove concern about the length of their play. It is important, but for our purposes here, it is not at the top of the intervention list. The reality is, if children play well, by default, they will play for longer periods of time...they just have more to do. Solve the complexity of the play, and you will normally solve any concerns about the duration of the play.

To begin, then, we need to see how complex the play really is, and that can easily be observed by noting the levels of play inherent in the environmental area chosen. Let's look at a typical block area:

When we look at that space, we normally will see blocks, but we also will see much more. Most block areas contain figures of animals, people, as well as small vehicles, and other props like signs or roads. In other words, we have the block play sequence to consider, but we also have to note how the child is using the supplemental toys in the area, both as stand-alone items and then as additions to the block play itself. Quite a bit to consider!

The other thing we need to consider is the overall developmental sequence of play. There is the increasing complexity of play with the toy itself and then there is the play with the toy in relation to other toys/objects in that area. For some children, we will need to target the complexity of the play with the toy before we even begin to think about trying to link the play with the toy to other items in that area. After all, if the child only has two play actions with the toy they are using, the ability to link that play to other items in the area will be limited. Best we focus on improving the play with single toys before trying to link toys together.

So, we are going to improve the play with the toy itself first, but once again, let's pause and think about what that means. Some children simply do not know what to do with the toy---they do not know how to use it. These children need to have their play enriched before we try to make it more complex. These children need **HORIZONTAL** expansion. They will be playing on a single schema level and learning all of the different single actions that they can perform with that toy. You already know the mechanics of play support so let's just look at the horizontal expansion possibilities for a common toy, a play garage:
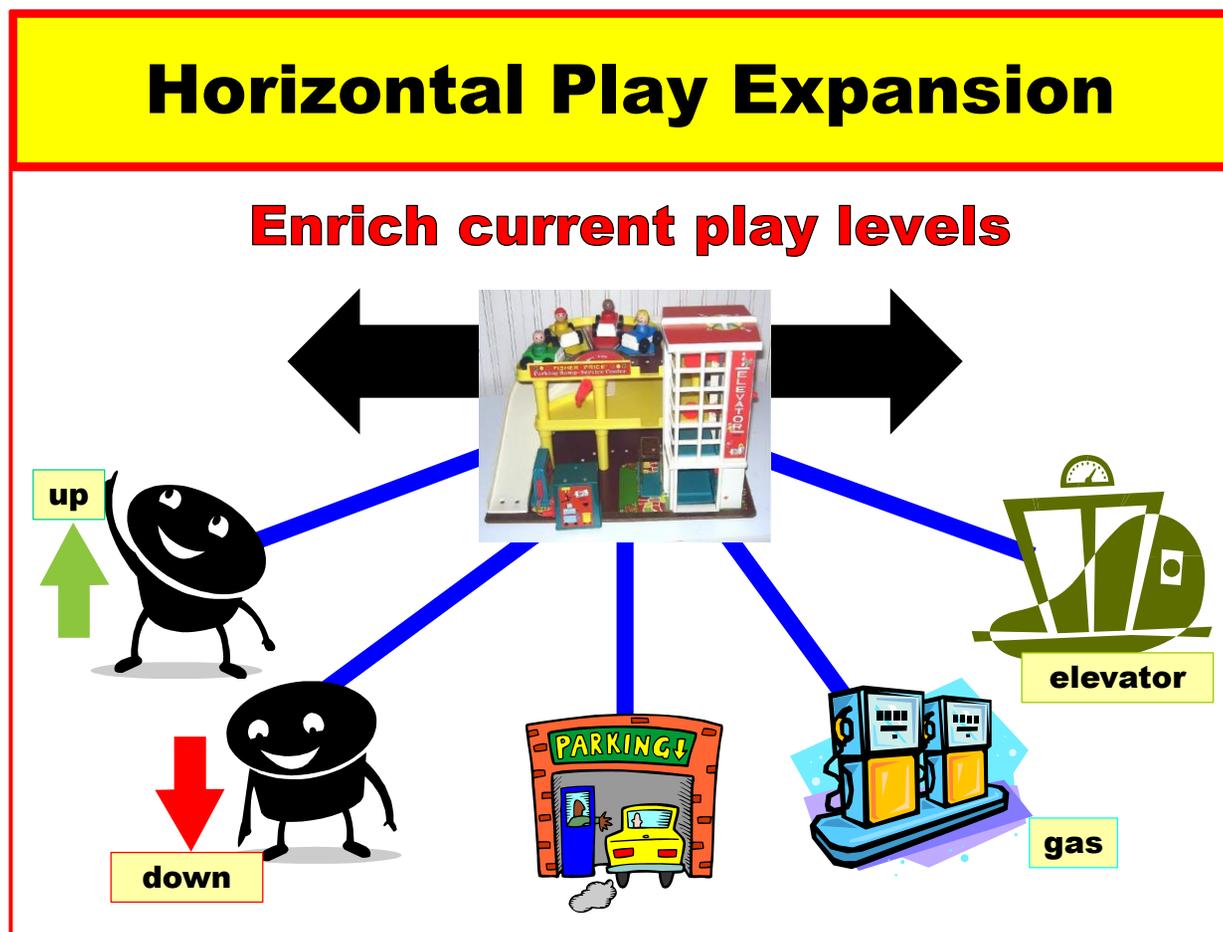

Children can perform many single actions with this old toy. They can run the car up the ramp and down, get gas, park, or go up in the elevator, to name a few. A child who lacks a significant number of these single play actions should be assisted in developing them before you move on to vertical expansion.
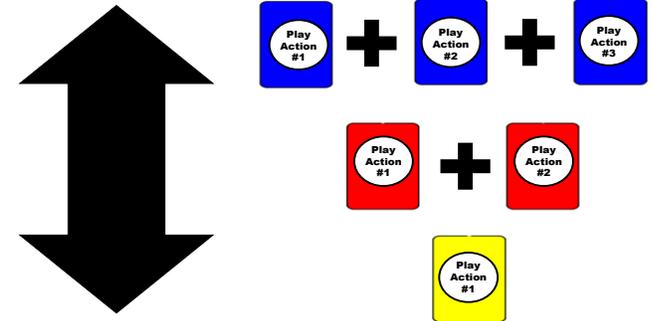
If a child has quite a few single play actions, they know how to play with the toy well enough to examine the complexity of their play. How many of these actions do they link together? Are they linked well enough that storylines are emerging (i.e. dramatic play)? We are looking for the child to be able to take those single actions described earlier and begin to use one after the other to create sequences. At first they will link maybe only two of the actions, but later, three, four, and more!

Eventually, as they begin to link these single play actions together, the thoughts behind them naturally becomes a story in the child's head, and it is this story that sets the foundation for dramatic play. For our toy garage, the linkages from one, to two, and then to three linked play actions might look something like this:
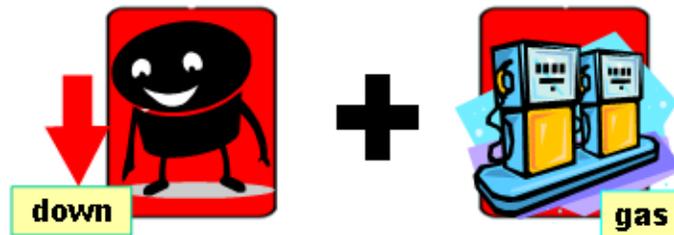
But, not all children move to this linkage level easily. Some children just do not have the ability to expand the complexity of their play, even though they have many single play actions for a particular toy. These children will benefit from systematic vertical expansion of their play.

In **VERTICAL** expansion, you will take the single actions the child already knows and begin to link them together in a multiple-schema scenario. Some children can only manage to link two items at first, and other children can begin with many more. You will know the best level to use for each child. Just remember the goal is to help the child link enough actions together to reach the symbolic/dramatic play level. This not only encourages cooperative social play, it will enhance **your** ability to successfully use play to teach behavioral and social skills. For this reason, this type of intervention is especially critical for children with developmental delays or autism!

At first you might just be having the child choose two cards and move them to their Velcro places

NOTE: There were a few times that the individual dots did not work well. Most of those children had autism and felt compelled to fill each and every dot with a card. With those children I used a strip of Velcro instead of dots to eliminate the problem or masked the other spots with a solid card (shown at right). This approach helped them focus on the play task instead of feeling compelled to choose more cards. Just FYI...

You can eventually move to more and more cards as the child becomes skilled. This can be lots of fun as a game (i.e. pick cards from the bag and place them in sequence and then try to act it out). I have also left these play cards taped in an envelope on the bottom of toys or outside certain play areas to support children struggling with significant play or social challenges. These children eventually begin to use the cards on their own, and I have even seen it become a group activity where children create story sequences for each other. They used to say they were creating "scripts" ☺

With a single toy — Doll — doll + house items

Between toys within one area — Toys in "House"

Between Areas — Housekeeping + Writing Center
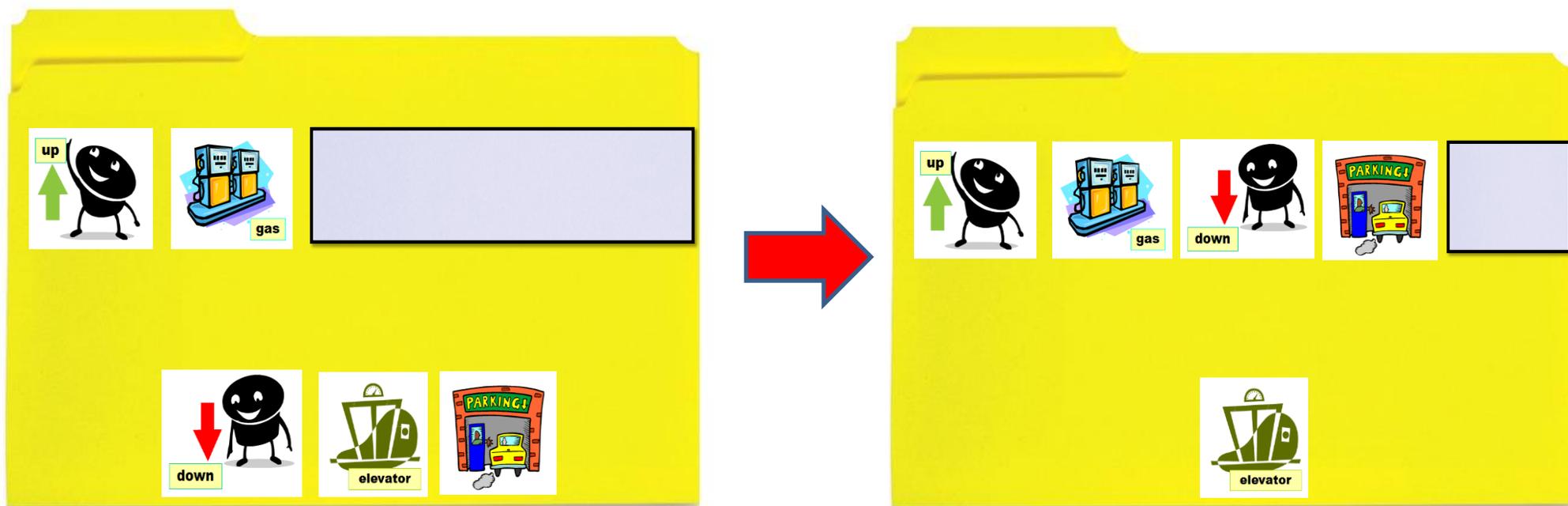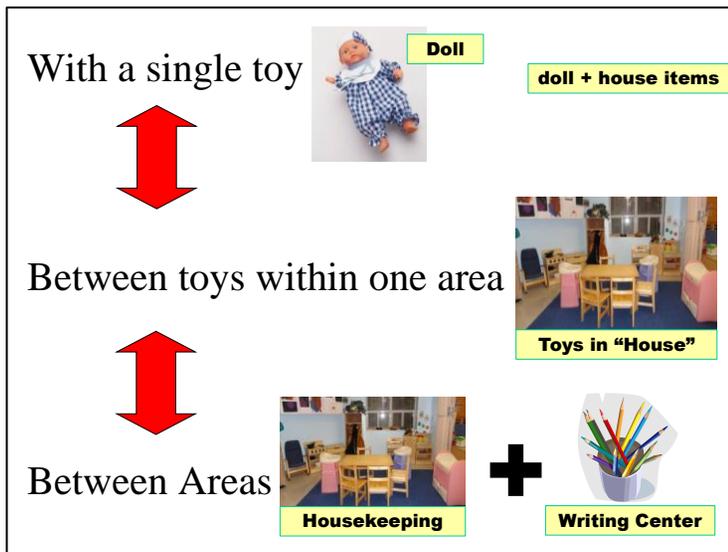
These types of expansions, horizontal and vertical, can be used on many levels. It is almost like layers of an onion. I can develop play with a single toy both horizontally and then vertically. I can also develop that play at a higher level by integrating it with other toys in the surrounding area. I can repeat this same intervention yet again between various areas of the classroom. There are few children who would not benefit from some aspect of this technique, if only on a casual basis.

This is especially the case for the play integration between toys in areas and between areas. This is where I see many children begin to fall apart. I see them playing in housekeeping, and they DO stay there quite a while, but their play is fragmented. They feed the baby…then they are done with it. They decide to use the stove…then they are done with it. They go on to use the shopping cart and pretend to go to the store….then they are done with it. They play with each toy well, and maybe even have fairly complex play within the scope of that single toy, but it never dawns on them to coordinate it all into a complex, dramatic scenario. In other words, they never realize that they can dress the baby, take it to the store to shop for groceries, and then come home to "make dinner" for the baby using the stove. They do not use the play schemas they have and integrate them to support play with other items.

It is the ability to see these linkages and coordinate actions that lends itself to true dramatic play scenarios….and down the road, to create stories through writing. But, this ability to generalize the play with one item to the play with another toy does so much more. It is exactly this skill that later allows a student to take knowledge from one subject area and use it during another school demand.

Skills must be integrated for success — Spelling, Math, Art, Social Skills, Writing, Reading

For example, how many of us have gone through lessons on spelling with older students (who show complete understanding) only to have them turn around a ½ hour later and misspell that exact same word during social studies. The ability to generalize what is learned and use it in different forms is critical. When we target this skill with little ones through play, we are laying the foundation for the integration of advanced concepts in academics. We are the "physical and visual cued" early childhood level that supports a very important cognitive skill for elementary school and beyond!

Teaching Eye Contact

The key to many play-based interventions for children with intensive needs is the use of turn-taking interactions. This takes on a new twist, though, when the goal of the intervention is establishing that turn-taking interaction itself! It is just this problem that we will tackle in this section to provide an example of advanced play intervention.

When working with children who refuse to make eye contact, the first step is to choose a toy that is strongly reinforcing for that child. The toy must be something that can draw the child's attention from a short distance (i.e. plays music, has flashing lights, moves, etc.). You then must figure out a way to make <u>your turn</u> with the toy more interesting and reinforcing so the child will want to pay attention. This varies so much that I will just give you a few examples of things I have used in the past:

Child Likes	Toy Chosen	Child's Version of Toy	My Version of the Toy
Music	Xylophone	Stuffed with paper to mute sound	Normal (unstuffed) so sound is louder
Trucks	Remote Control	Wheels bent or surface controlled so it doesn't travel far or well	Operates normally and rolls far
Water Play	Pat Mat	Normal with floating sponge shapes	Glitter added and penlight turned on underneath so my turn sparkles

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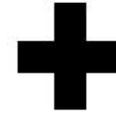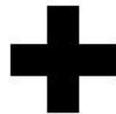
The process is then simple. Allow the child to play with their item, and at some point stop the child long enough for you to take a turn with your toy. If you have to have someone gently hold the child's hands down in order to get your turn in, do so. If you have manipulated the difference between the child and your toy well, it will catch their attention. The TOY will catch their attention, mind you, not YOU. But, that is OK; we first have to get them to pay attention to your *toy* before we can get them to pay attention to you as a person. When you have their attention, end your turn shortly after. You do not want them to turn away….you want to be the one to end the turn first, so make sure to keep it very short!

Once you have their attention in these transient moments, the process becomes easy. You will then begin to prompt their eye contact by bringing <u>their</u> hands to <u>your</u> face. When you do this, 90% of the time you will get eye contact. It is fleeting, but it is there. Do not maintain the eye contact for long, just get it, and then take your turn. Once you have accomplished this momentary eye contact, the sequence of intervention will follow this general pattern:

1. Child notices your toy for a moment

2. Child begins to maintain attention to <u>your toy</u> until you end your turn (make your turn short)

3. Child begins to anticipate your turn and stops their action on their own to turn to look at your toy because it is more interesting (you set it up that way)

4. Begin to prompt that fleeting eye contact immediately prior to your turn. Be in close enough proximity that the child's eye contact prompt and your play turn can happen without moving across the room.

5. Once the momentary eye contact is well established and tolerated, extend is for a second or two.

6. Continue to extend eye contact until you are maintaining it for four or five seconds.

7. Prompt the eye contact, maintain it, but then **do not** take your turn…..if you wait long enough, the child will eventually turn to you and may even make eye contact on their own. When this happens, reinforce them in a manner appropriate for them and take a *very long* turn. Allow the child to maybe even take a turn with your toy--- whatever you think will reinforce the behavior.

8. Continue to require self-initiated interaction and eventually self-initiated eye contact before you will take your turn.

9. Vary toy, routine, and location to maintain the child's interest and build the skill. Eventually generalize to other highly reinforcing activities such as snack or going outside. This *eye contact precursor* can be incorporated into any daily activity. Before they get what they want, they must make eye contact, even if it is transient at best.

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The key to this intervention is choosing the correct toy and the pace of change for that child. Some children will move rapidly through this sequence, and others, well let's just say you had better be ready to be VERY patient.

Regardless of how long it takes, though, please take the time to work on this skill. Many professionals shy away from this demand because they are worried it is uncomfortable for the child, and this is true. If eye contact was comfortable and easy for these children, they would be doing it already. But that is the point----it is NOT easy and will need to be developed over time. Rarely will it develop on its own.

So, just like tolerance is built for many other sensations, this tolerance must also be developed, or the child will be forever isolated. I would rather slowly develop this skill, pushing the child forward through the difficult parts, than leave the child forever lacking this most basic social interaction skill ☺

Removing Perseverations

A similar turn-taking process can be used to slowly transform a non-play action into a true functional play schema. This technique can be especially useful when working with children who tend to flap, throw, or spin toys rather than playing with them. Like the earlier approach used to establish eye contact, the key to success will be your ability to pick a set of objects that will support the child's current action. Some I have used in the past include:

Action	**Functional Play Manipulation Targeted**	**Play then Possible**
Throwing	Placing objects down with control	Stacking, pressing, pushing
Spinning	Turning objects then stopping the action	Winding, turning, stopping a spin
Flapping	Bringing object/finger down to press for a purpose	Fanning, pushing, button press

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Then, the rest depends on your creativity! Since this is so dependent on the situation, behavior, toy preference, age of the child, etc. I will provide an example in hopes it will give you enough insight into the process to proceed on your own. If stuck, though, just contact me, and we will brainstorm together!

For this example, I will focus on a child that is throwing toys. This infantile action can be seen as part of the normal play sequence in very young children. What adult hasn't wearied of the old "throw the toy out of the playpen or off the highchair tray" game? The problem emerges when the child gets stuck at that level and cannot figure out what else to do with the toy. This usually leaves them with the option of either mouthing or throwing the object, neither age appropriate for most preschoolers.

To make the transformation process work you will need to figure out three things:

1. The child's perseveration.

2. The toy that will use the child's current perseveration and lead to a functional play action.

3. The play goal that will result from the combination of #1 and #2.

4. A reinforcer that will encourage the child to move forward.

In one very memorable case, I chose the following:

Perseveration
Throwing

Toy Used
Foam Blocks

Functional Play Target
Stacking

Reinforcer for Child
Music

Once the basic plan was in place, the following sequence of intervention was used:

1. Have the child play in a location that has a wall and/or corner to support the stacked blocks.

2. Stop the child's "throwing" action at the top of the curve downward by guiding the child's hand (with the block still in it) gently down onto a mat that plays music when pushed. Keep the reinforcer (music playing time period) short.

3. Gently disengage the child's hand from the block, leaving it on the mat, and then give the child another block to use (throw). Repeat steps #1 and #2, slowly building up a small stack of blocks.

4. When four or five blocks are stacked, show the child how to knock them over, and artificially press down on the mat so it plays music for a longer period. Add other reinforcers (praise, clapping, hugs, etc.) as appropriate so this "last step" becomes **very** attractive.

5. Repeat all steps until the child begins to complete portions of the task on own. Vary blocks, reinforcers, location, etc. to reduce fatigue with the process and do not run the intervention too long, especially at the beginning!

Once you have this general movement in place (i.e. take a block and bring it down with control), well, then you can do so much! Some expansions I used in this case were:

*Embedded a cookie cutter in the foam block and put very soft playdough on the mat so the child could make and feel the imprint.

*Used block to push keys of a xylophone and cash register.

*Stacked blocks in a remote-controlled truck and then used a block to press the "run" button.

*Then, I eventually transferred the "press with a block" action to "pressing with finger", and this small modification opened up many other possibilities!
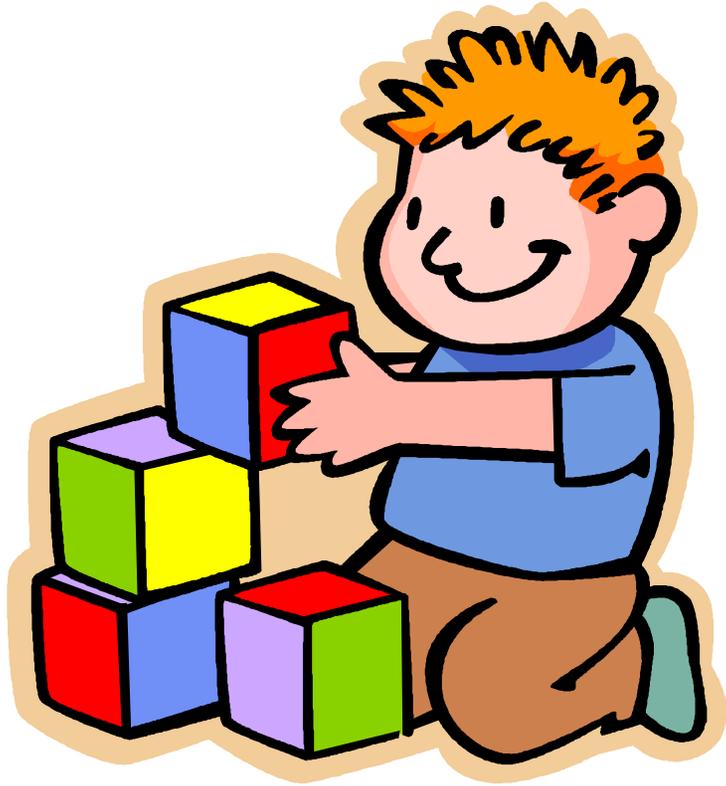
The main thing to remember when approaching this level of intervention is to accept the fact that it will take long periods of time to develop the skill in most cases. I have had a few children that moved so rapidly it was a bit startling, but those cases were the exception, not the rule.

For most children, though, the perseveration is very reinforcing and carries a sensory quality that will be hard to combat, and this means that removal of that action will take some time. Just stay with it, and you will eventually see results.

Once you have significant progress and some actual play actions, you can then begin to support the play using the horizontal and vertical expansion we discussed earlier.

Reducing Aggressive Play Themes

As seen so far in this document, play is flexible, alterable, and if approached wisely, can be used to establish various skills. A weakness that I have seen emerging in children as a whole is the ability to play with gentle purpose. Some children lack the *purpose* side of the equation; they do not plan or execute that plan well. We have dealt with that problem at length. Now, let us look briefly at the "gentle" side of the problem.

I have already mentioned that play skills are surprisingly weak in our children, and this leaves them with an inability to generate the dramatic scripts that will guide their play actions. Since they cannot generate these stories on their own, they turn to the "ready-made scripts" they have seen for ideas….television shows, cartoons, comic books, video games, etc. See the problem? These "stories" often tend towards violence, so the increase in violent play is just logical. Yes, it is true that some of the increase is due to violent personal home experiences, but a great deal, maybe even most of the problem, stems from poor play skills.

In light of this issue, you can correct the problem by just improving the play skills as a whole, and we have already covered those techniques for you. Now, what to do with the children who truly need violent play conversion, what should you do with them? Well, the techniques you will use are very similar to the section we just covered on Removing Perseverations (page 76). You just take the current play level, in this case the violent theme, and replace it with a new scenario or storyline. It is quite easy to do once you see it described. A full explanation of this approach can be found in the document titled, *Reducing Aggressive Play*. It is definitely worth a quick read---there are many children who desperately need this assistance!


By Maria Sargent
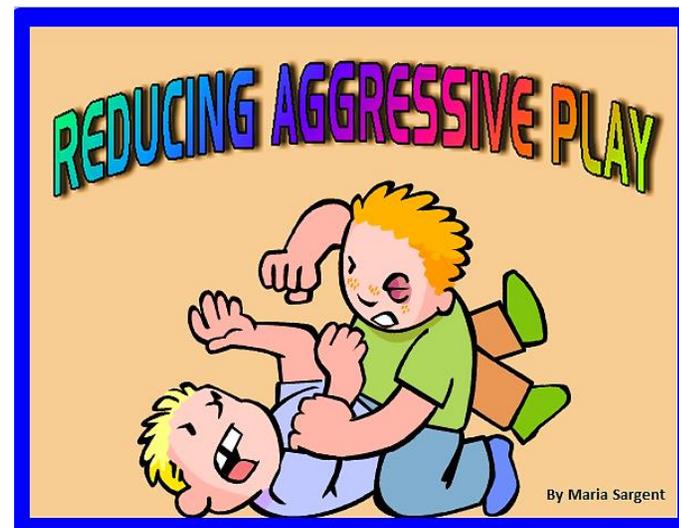
Teaching Impulse Control

The same approach described in the last section on Reducing Aggressive Play Themes can be applied to developing and expanding any behavioral skill. It really doesn't matter which skill you target, you can follow the exact same process already outlined. You just have to determine the need and the current level of play before you replace or expand areas of weakness.

Up to this point, we have been looking at play deficits that might need to be corrected, but I do want to mention that the reverse also applies---we can USE play to teach non-play skills as well. The approach works wonderfully in reverse, and the techniques to be used will be the same.

You already have a great handle on the basic steps, but if you would like to see a direct application of these approaches to a purely behavioral skill, please take a look at the document titled, *Teaching Impulse Control*. This is definitely an area of weakness for many children, so the information might be useful to you…

TEACHING
IMPULSE CONTROL

By Maria Sargent

Reducing Selective Mute Tendencies

How far can you actually go with this set of techniques? Well, as far as you wish, to be honest. Just take something as unusual and difficult to manage as the inability to speak publically. This problem may stem from any number of issues including:

1. Articulation problems that cause embarrassment
2. Social anxiety in front of a select group (i.e. non-family members, genders, ages, etc.) or at certain locations (i.e. outside the home, when away from known environments, etc.)
3. Unusual tone of voice that resulted in teasing and has now caused a reluctance to speak
4. An abuse situation in which the child has been sworn to silence (i.e. they may extend it to total silence in order to make sure they do not slip and reveal the secret)
5. Any number of communication and speech problems
6. A shy nature that resulted in attention or assistance (i.e. this can snowball and accidentally become a reinforcer over time)
7. Related to #6---a child who has assumed the identity of being the child who "does not speak"

The list could go on and on… So, before you begin, you really need to think through the issue you are dealing with, and in most cases, work in concert with a mental health professional/counselor and/or speech therapist to construct and support the program. Many of these problems go beyond the classroom, so it is not unusual to be working with professionals from various disciplines. Even if the child is receiving that type of emotional support, the actual play intervention outlined below may still be useful. Decide as a team how it will be fully integrated across all aspects of the child's program for the best result.

Assisting Reluctant Speakers
The key to dealing with reluctant speakers is to remove the pressure to speak. This means using techniques that encourage speech without the child realizing what is happening. Here are some approaches that have worked wonderfully in the past, but please fully assess the child for behavioral, emotional, and physical problems that might be causing the issue first. You need to make sure the child truly can and should be encouraged in this manner before you begin this type of intervention. Then, if you, the family, and professionals are comfortable proceeding, try some of these

ideas and see how this child responds …..and don't be afraid to try anything else that comes to mind. This situation is definitely individualized!

1. Fade in language using developmental continuum for language
This technique "fades in" communication by first using gestures, then sounds, then words. Make it a silly game using cars, animals, or some type of favorite toy. If you play the game in a turn-taking type of interaction, you can get the child so engaged that they are soon making sounds with abandon. Throwing in funny sounding speech (high pitches, low growls, etc.) then becomes a natural progression and can break the "silence barrier" some children have in place. Just make sure to not move to speech/words too quickly----this will immediately put some children on edge and may ruin the use of this game for good.

2. Remove the "social" aspect of language
Some children do not mind speaking as much as speaking to people. This can be noticed in children who speak quietly to themselves in play or willingly speak to trusted adults but refuse to speak in social circumstances like circle or the general classroom. If you notice this, then this technique may be the one to try!

So, you can remove the "social" aspect of communication by allowing the conversation to flow through some type of device or toy. I have used tape recorders, Yak-Baks (a tiny hand-held device that records speech that was popular about years ago---you can still find them around, especially on eBay), stuffed animals that record speech when foot is pressed, the new books that record speech on each page, cheap echo microphones from the dollar store, karaoke machines, video cameras, etc. Anything that records or amplifies speech in a novel way will work. Then, just begin to play with the item. Most children become so enthralled with the activity that they never notice the amount of speaking they are doing.

3. Embed speech in an activity that uses a loved profession/career
Many children who do not speak will become quite verbal if the speech is required within the context of dramatic play. So, a child who will not speak willingly may readily talk when pretending to be a weather reporter, quarterback calling out the next play, cheerleader performing a cheer, etc., especially if they are being video-taped. You get the idea ☺

4. Embed speech in the context of a story, song or fingerplay
Some children find speech easier to handle when it is hidden in the context of some type of song, chant, or drama-based activity. So, a child who is usually silent will speak when dressed as one of the three little pigs and reciting familiar lines

of the story or participating as the fourth monkey and acting out the fingerplay for "jumping on the bed". If the child is especially reluctant, participating in choral fashion (all speaking together) can be a lovely way to break the ice.

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Know that some children will need work and time to begin to speak outside the context of these activities. If you still see extreme reluctance despite all of this work, you might need specialized techniques for children who are selectively mute. See me or another professional for that information. Meanwhile, make sure that silence is not working for this little one. Gently but firmly require speech for daily choices (e.g., choosing play areas or snack) and other classroom situations. If the child's day moves along just fine *without* speech, then they simply will NOT speak---there is no reason or consequence that makes it worth their while. So, continue to make speech useful and reinforcing. This type of gently but firm demand will definitely help move things along.

Assisting Children who are Gifted & Talented

I want to take a moment to mention a group that is often overlooked, children who show accelerated development. Because of their profile, it is easy to overlook the play-related issues they might have. Here are some of the issues that are commonly seen in these children:

1. Extreme Part-to-Whole play
Sometimes children who are gifted become overly focused on the physical mechanics of the play. The demands of putting together a complex block building, constructing a 1,000 piece puzzle, or painting a picture so it covers every square inch of paper totally take up their time and may even become a source of stress. Just make sure that play remains pleasurable for this group and intervene to encourage Whole-to-Part usage if there truly is a problem.

2. Extreme Whole-to-Part play
The opposite might also occur….. I often see an over-focus on Whole-to-Part play in children who are so gifted verbally that it is just easier to imagine and talk than physically play. While it is mesmerizing to watch these little actors and actresses play out their scenarios in dramatic play areas, do make sure that they are not avoiding the physical action of the play.

3. Avoidance of play areas that highlight fine motor tasks
While children will have play preferences, it is important to make sure they do not totally avoid the fine motor skills more strongly associated with the puzzles, art, and small table toy areas. The children who tend to avoid this fine motor play may have emerging Dysgraphia, a common problem among the highly gifted. If you are unfamiliar with this processing issue, please see the document titled, *Dysgraphia: Hidden Handwriting Disabilities*. If fine motor tasks and concrete manipulation of toys is being avoided in favor of social and verbal (dramatic) play, just find ways to bring those fine motor skills and materials into other areas of the classroom. A child can use masking tape to make roads, create coupons for a store with crayons, use completion of a puzzle as the way to unlock "the door into the tent", etc. It is quite easy to determine which play areas the child loves and then to sneak toys from the ignored areas into that center. If the added material is appealing, novel, and integrated into the existing play scenario, the child will begin to use it!

4. Frustration with developmental level of peers

In some cases, a child may be so advanced developmentally that they find it difficult to interact with peers who are operating at a lower, albeit, age-appropriate level. Some problems to look for include:

-Rejecting certain playmates and/or excluding them from play at some point in the interaction

-Having to be "in charge" and/or insisting on creating rules to guide the play

-Becoming frustrated with mistakes or when peers respond differently/at a lower level

-Ridiculing peers for their work or ideas

-Becoming angry when they fail or make a mistake in front of others

-Introducing play scenarios or ideas that are rejected because they are too complex or unique

These are only a handful of concerns you may see… The main thing is to realize that this group of children may need intervention as much as a child who is developmentally delayed. It is easy to become over-focused on the high achievement of these little ones and miss the difficulties the high skill profile may bring. Children who are gifted and talented are definitely a group that is easily missed!

Final Thoughts

Reclaiming Forgotten Methods

We have discussed many techniques, and there are so many more out there to be explored! Please make sure to do this when you have a moment. I would also like to encourage you to search both the new and the old methods. Let me just highlight a single example to get you motivated to explore. Let's pick a foundational figure of our field, Friedrich Froebel (1782–1852), the father of kindergarten. Just look at a few of the materials he developed to enhance mathematical and physics knowledge at the kindergarten level (at right and below).


Shapes from crystals

Constructed with flat sticks in 2-D form

Eventually constructed in 3-D form
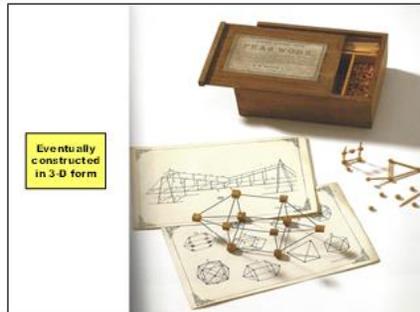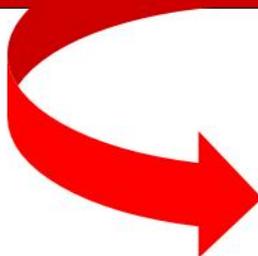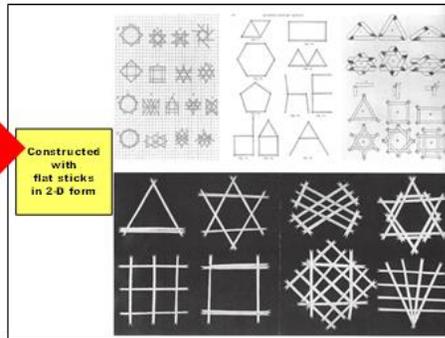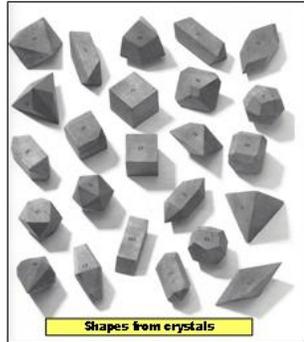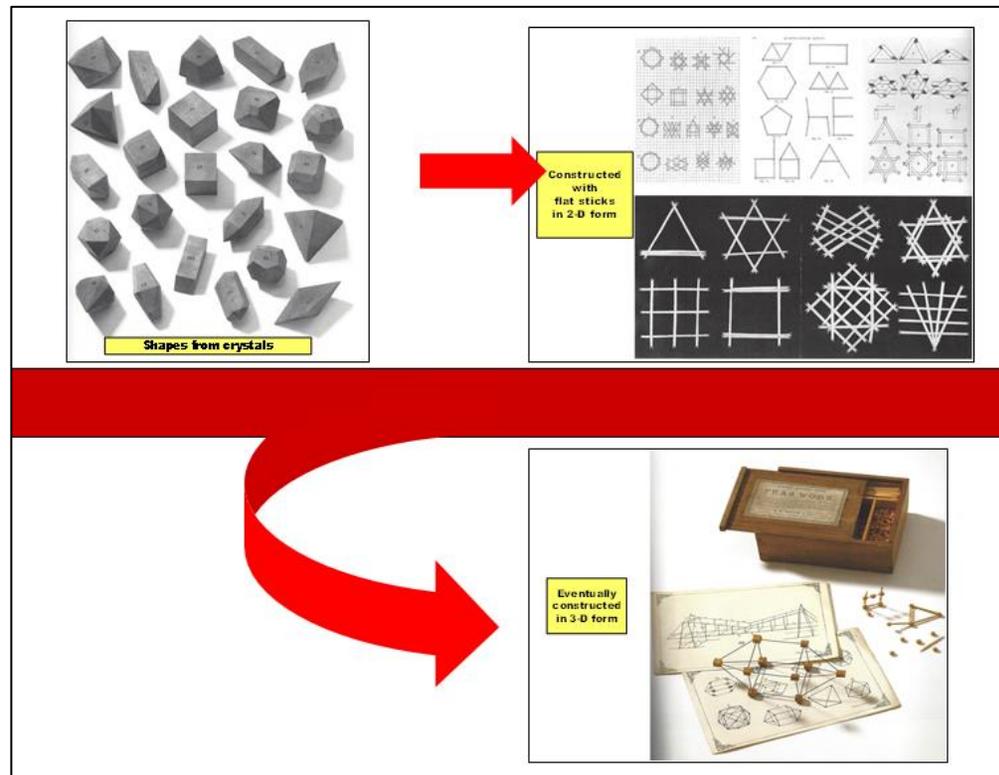
This same type of physical interaction with advanced concepts can be seen in the following "physics" play:

Plate I(a).	FIRST GIFT.		FIRST GIFT.		Plate I(b).
1. There Here.	2. Here There	3. Over.	16. Back again.	17. Wind up.	18. Wind down.
4. Tip tap tap.	5. Up, up, up.	6. Jump, jump, jump.	19. Jump over.	20. Roll on.	21. Roll back.
7. Turn round.	8. To the left.	9. To the right.	22. Always smaller.	23. Always larger.	24. Higher
10. Lower.	11. Circle round.	12. Always quicker	25. Draw, draw, draw.	26. There he falls.	27. Ding dong.
13. Now he's gone.	14. There he is.	15. I catch him.	28. I keep him.	29. He sinks deep.	30. Look for it.

Of course we can't totally import any technique without thought. We must adapt it to the needs, experiences, culture, and time-period of the population we are serving, but there definitely is food for thought here, isn't there?

If you would like to explore these concepts further, I have provided some links here that are active at the time of this publication:

http://froebelusa.com/brief-history-of-the-kindergarten (see store for toy examples)

http://www.froebelgifts.com/resources.htm

http://www.froebelweb.org/web7010.html

I am sure there are many others...

An interesting resource (and the source of the above photos) is pictured to the right. This highly pictorial book is a lovely way to begin this exploration.

Regardless of whether you explore this method or other older models, please do try to retain the lovely practice you have worked so hard to construct. We are not preserving our professional knowledge well for the next generation. There is no reason we need to continually reconstruct our field from scratch. If you have created wonderful materials that would be of use to other professionals, consider putting that information out into the public domain in some form. It is easy to do, and you could help many others in the future ☺

Inventing KINDERGARTEN

Norman Brosterman
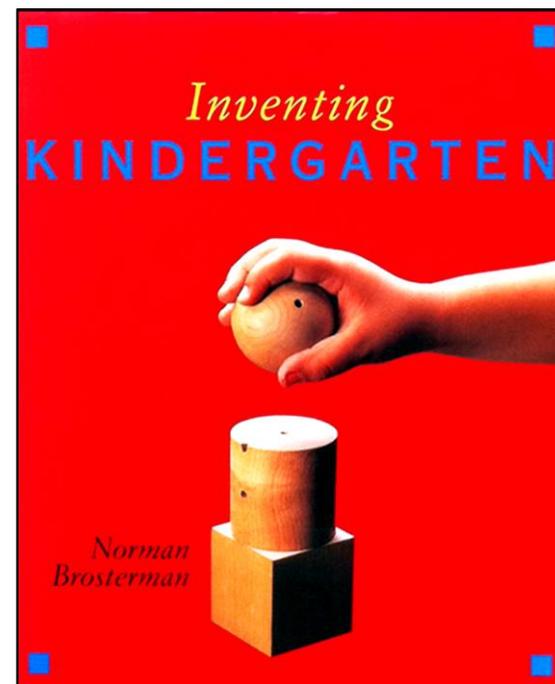
Silence as the Precursor to Advanced Play

The last concept I will mention is really just a reminder to tie other skills into play enhancement. Probably one of the most critical is the ability to use silent thought. If a child cannot think internally, they cannot imagine and problem-solve, both key skills for advanced play.

The full manual on how to help children tolerate and then use silence is presented in the following manual at the www.Neuro-Teach.com site. I hope it proves useful to you!