Problem Solving (EPSI) Scoring

Scoring procedures are designed to record the degree to which the child solves problems that require reasoning about objects, concepts, and situations. Each key skill element that is used by a child to solve a problem is tallied. Scoring of key element behaviors includes: Looks, Explores, Functions, and Solutions. Each key skill element is coded separately as it occurs. All key skills are coded using a frequency count. Each instance of a behavior is counted and recorded with a tally mark. Each assessment requires three sets of toys, each toy set is used for 2 minutes for a total of six minutes. Coding forms have different sections for each key element and are separated into three 2-minute segments (one for each toy).

Looks:

Indicator	Definition	Measurement
Looks	Child orients body, faces or moves toward and/or looks at toy that is presented by placing it near the child, in their hand or on their body. Child may or may not reach for or pick toy up.	Occurrence/nonoccurrence

"Look" is coded when the infant/toddler looks at, faces, or moves his/her head toward a toy(s) that is placed near them, that someone gives to them, or that they reach for or manipulate. "Look" should be coded when the infant/toddler appears to gaze at or stare at the toy(s) for any amount of time, or if their eyes or head moves back and forth between toys presented. However, if the child actually touches or manipulates the object, explore is coded.

A Look episode ends when the child looks away from the toy for 3 seconds or more, or if another key skill element occurs. For example, if the child gazes at the toy (one episode of Look is scored), then looks at her shoe for 2 seconds, and immediately returns her gaze to the toy, do NOT score another episode of Look because she looked away for less than 3 seconds. If the child looked at her shoe for 4 seconds, then back to the toy, then score 2 separate episodes of Look.

Look should be coded only if the infant/toddler is looking at the toy(s) presented.

Do not score Looks if:

- The child looks toward the adult, or other toys or objects in the room
- The child is looking at his/her body or clothes, "look" should not be coded
- You can score an explore, function, or solution (For example, the infant/toddler is holding a shape up to his/her face and looking at the shape while also exploring the shape with his fingers, then ONLY score Explores.)

Explores:

Explores	Child touches, manipulates, mouths, rubs, shakes, pushes, pulls, bangs, throws, drops or explores the toy through their senses.	Occurrence/nonoccurrence

The infant/toddler (a) touches or moves his/her fingers to manipulate the toy, (b) puts the toy in their mouth and bites or chews on the toy, (c) rubs fingers or another body part against the toy, (d) shakes the toy, (e) pushes a button or another part of the toy, (f) pulls the toy, (g) bangs against the toy with another toy or with the hand or foot, (h) throws the toy and watches the toy land (may repeat this), (i) listens to the toy(s), or (j) smells the toy(s) by putting it up to their nose.

Pushing the pop-up pets/dinos back down after they have been popped up counts as an explore.

Do not score Explores if you can score a function or solution unless the child is 'exploring' with one hand and causes a function or solution with the other. In this case, score both an explore and a function/solution because both behaviors are co-occuring.

Explores must be separated by at least 1 second.

Example 1 : The infant/toddler is trying to put one of the stacking rings into the mouth and bite, gum or chew on the ring.
Example 2: The infant/toddler pushes the shape off of the table and watches the toy land on the ground. When toy is replaced, the infant repeats this play.

Functions:

Functions	Child makes toy perform a function or create an effect (e.g., popping up, fitting into, taking out, sorting, making music, stacking, opening, closing, fitting pieces).	Occurrence/nonoccurrence

The infant/toddler moves one or more toy parts by manipulating the toy with their fingers by pushing, pulling, moving, stacking, or tapping to make the toy perform a function or to create an effect (e.g., music turning on one part of toy popping up, putting a ball into toy). Performing a function is using the toy in a manner in which it was intended but does not require that the child complete all of the functions of the toy that result in a solution (see below for definition of a solution). Score a function each time it occurs, even if that function results in a solution.

Examples:

- Child pushes on the button to make one dinosaur pop up.
- Child puts one, or a couple of cups into a larger cup but does not complete fitting all of the stacking cups into each other.
- Child stacks all of the cups, but they are not in the correct order.
- Child puts a ball in the gumball machine
- Child pulls the lever on the gumball machine regardless of whether a ball comes out or not
- Child pushes the lever on the gumball machine to make one ball come out.

Solutions:

Solutions	The child manipulates the toy(s) in such a way that its full functionality is displayed.	Occurrence/nonoccurrence

The child uses all of a toy's functions (see above) to solve a problem (e.g., manipulate the pop-up toy so that all dinosaurs pop up, puts the balls into the gumball machine and pushes the lever so that all of them come out). He/she may use a variety of approaches (e.g., bangs, pushes, shakes) to complete the toy solution. When counting a solution, make sure that you have scored/given credit for the last function the child performed to make that solution possible (i.e., the child is pops up the 4th pet/dino. They get credit for both the function of popping it up as well as the solution for it being the final one needed.) The child may get more than one solution per toy in a 2 minute period.

Solutions for each toy:

- Pop-Up Pets/Dinos: ALL of the pets/dinosaurs have been popped up during the 2 minute play session. (They do not have to all be up at the same time, and they do not have to have been popped up in order.) As long as each pet/dinosaur is popped up at one time during the 2 minutes, a child gets credit for a solution.
- Gumball Machine/Pound a Ball: 3 balls into the toy and back out of the toy count as 1 solution. They do not all 3 have to be in the toy at one time, nor does it have to be 3 different balls. (It can be the same ball in and out 3 times).
- Stacking Cups: All of the cups stacked or nested in the correct order.

Examples:

- Child puts at least three balls into the ball machine and pushes lever to make them come out. A solution would also be counted if the child made the same ball come out three different times (e.g., put the ball in, pressed the lever so it comes out, and repeated this two more times). Note: The number of times the ball comes out for a solution depends on the number of balls present during the session (3-5 are recommended).
- Child stacks or nests 4-5 of the stacking cups in the correct order, or makes all of the toys pop up. A solution is counted if the child completes all of the toy actions as described above. Each time a child does this, a solution is scored.