Early Math and Discovery

Cool Tool

Cost: None
Mess factor: Some
Suggested location: For younger infants: wherever you nurse or give your infant a bottle; for older infants: kitchen (highchair)

Experiences your children will have
- Responding to an object
- Exploring a tool in their play

Materials
- Items for feeding (breast or bottle; infant spoon, bowl, and food)

Beginning
If you are nursing or feeding your infant a bottle, position yourself in a comfortable chair. If your infant is older and experienced at eating baby cereal or other types of food, secure your child in their highchair and sit in a nearby chair.

Middle
As you prepare to nurse or give your infant a bottle, notice how your infant responds by turning their head in the direction of the milk. Older infants will place their hand on your breast or reach both hands to hold on to the bottle.

For older infants, choose a spoon designed for infants. Infants may be a bit clumsy at getting the food to their mouth with a spoon; alleviate some of this frustration by feeding your hungry infant most of the food, before handing over the spoon. Place the spoon in your infant’s hand, demonstrate how to scoop, guide the spoon and food to your child’s mouth, and describe what you are doing. Then give your child a chance to use the spoon. Remember that your child might explore the spoon in different ways (e.g., put it in their mouth [without any food on it], throw it on the floor, or put it in their hair) without using it for its intended purpose. These are all normal ways that an infant explores an object. Describe what your child is doing (e.g., you might say, “You’re using the spoon to pound on your tray”).

If your infant’s attempts to use the spoon aren’t immediately successful, your child might simply pick up the pieces of food. If this happens, keep in mind that it takes young children time and experience to learn how to handle tools and for their muscles and coordination to develop enough to manipulate tools successfully. When your child is successful, encourage him or her (e.g., you might say, “You scooped up the carrots with the spoon and put them in your mouth!”).
End

Your infant will eventually become full or tired of attempting to feed him- or herself. If your child is full, say that mealtime is all done. Otherwise, go ahead and finish the activity by feeding your child the rest of the meal.

Cleanup

Be prepared that you might have a messy infant to clean up! Use a washcloth to clean off your infant and the highchair tray and seat.

Older children

Older children will begin to use tools for their intended purpose and in ways that support their play (e.g., use markers, paper, and tape to make a birthday card or the end of a wooden spoon to get play dough out of a small container).

Hints

• Think about other tools younger infants might use to satisfy their needs or desires — a cold teething ring or a blanket, a stuffed animal, or other comfort item can all serve the purpose of providing comfort or stimulation.

More!

Give older infants new tools — that are safe — to explore. Here are some ideas of tools that infants might enjoy playing with:

In the kitchen

- Plastic bowls and lids
- Wire whisks, spatulas, large spoons
- Measuring cups and spoons
- Vegetable brush or pastry brush
- Pots, pans, metal baking pans

In the bathroom

- Hairbrush and comb
- Toothbrush
- Washcloths or towels

In the yard or sand box

- Shovel, hand rake, and bucket
- Watering can

At the kitchen table

- Crayons or markers
- Tape
- Wooden or plastic hammer or mallet (to use with play dough)
- Rolling pin (to use with play dough)

Special needs accommodations

Many adaptive tools are available to help children with special needs be successful (e.g., adapted or weighted spoons). Consult with an occupational therapist or search online for occupational therapy supplies to get some ideas for adaptive tools.
**Exploring Objects**

**Cost:** Less than $10 (depending on the materials used)

**Mess factor:** None

**Suggested location:** Anywhere

**Experiences your children will have**
- Looking at or handling one object and then another
- Gathering three or more objects

**Materials**
- Infant toys (choose toys that are easy to grasp, with bright colors, stimulating patterns, interesting textures, and soothing sounds)
- Safe and interesting objects found around your house that your infant can explore, such as basting brushes, whisks, or measuring spoons

**Beginning**

Depending on your child's age, position your infant on a blanket lying down, sitting in your lap, sitting on the floor with your support, or sitting independently. Surround your child with several interesting toys or objects, positioned nearby. (For younger infants, offer two or three objects; for older infants, increase to five or six objects.)

**Middle**

If your infant can't yet grasp objects, simply hold an interesting toy over their face to watch. An infant who can sit supported but can't grasp objects can watch toys that you hold in each of your hands. Give your child plenty of time to look at a toy and then shake the toy in your other hand.

If your infant can grasp objects and sit, either with your support or independently, give them a toy to hold and explore a toy. Younger infants may simply hold on to the toy with one hand, while older infants may transfer the toy from one hand to another. Present a new toy and observe what your child does (e.g., they might glance at the new toy but choose to continue exploring the first one or drop the first toy and grab the new one). Older infants will enjoy sitting on the floor with toys spread around them and may reach for and pick up two toys, one in each hand; exploring toys by looking first at one toy and then at the other; or placing one of the toys in their mouth, followed by the other one.

Older infants may start collecting toys and placing several in a pile. When children gather toys or objects in this way, you will know that they can attend to more than one object at a time, which is a milestone in their development.
Exploring Objects

End

Younger infants will show they are losing interest in this activity by crying, squirming, or arching their back. Try showing your child a new toy or changing their position before transitioning to a different activity. Older infants may show that they are finished by simply crawling away and finding something else to do. If your child is engaged in the activity but it’s time to transition to another activity, try singing a cleanup song to let them know that it’s time to put toys away and to indicate what’s going to happen next.

Cleanup

An older infant may enjoy helping you clean up by transferring their collection into a box or basket. If your infant isn’t enthusiastic about putting away the toys, consider letting him or her continue holding or exploring one toy or object as you move on to your next activity.

Older children

Older children will extend this activity by lining up the objects and noticing the properties of the objects in more detail (e.g., color, shape, size), which sets the stage for recognizing, copying, or extending simple patterns.

Hints

• As your child becomes more mobile, place toys, board books, and other easy-to-grasp objects around the room within your infant’s reach. Have containers available, and demonstrate how to fill a container with toys. Your child may start using a container to hold objects he or she collects.

More!

Older children begin recognizing, copying, and extending simple patterns (e.g., blue-yellow-blue-yellow). While infants are still several developmental stages away from this milestone, introduce them to patterns through play and your daily routine. For example, lift your infant into the air while saying “Up” and then lower them while saying “Down.” Repeat this several times while saying “Up…down…up…down” and continue until either your infant (or your arms!) get tired of this game.

Special needs accommodations

Infants with special needs can easily become overstimulated, especially when exploring something new or trying out a new skill. Minimize other distractions (e.g., lighting, background noise, and general visual clutter) before presenting your child with a new material or an idea. Speak in a calm tone, and offer gentle reassuring touches as your child explores a new toy or tries a new skill.
**Do You See What I See?**

**Cost:** None  
**Mess factor:** None  
**Suggested location:** Anywhere

**Experiences your children will have**  
- Searching for objects in their immediate environment  
- Naming objects

**Materials**  
- None

**Beginning**

Tell your child that you are going to play a game where you have to hunt for things around the room: You are going to tell your child to hunt for something, and he or she is going to look for it. Start with objects that are big and easy to see. For example, you might say, “I spy a big, blue pillow.” Encourage your child to point to or touch it.

**Middle**

For younger toddlers and for the first few rounds of play, keep the objects simple. Use the names of objects (e.g., truck, pillow, bowl) rather than descriptive words about the object (e.g., red, bumpy, small). If your child is struggling to find an object, give simple clues by pointing in the right direction or naming something that is near it. You can also collect a few items and encourage your child to locate an object from this small collection.

As your child becomes more familiar with the game and develops an increased vocabulary, increase the challenge by choosing objects that are partially out of sight (or out of sight but in a familiar place) or by giving descriptive words about the object (e.g., “It’s something red that you put your head on when you go to sleep”).

**End**

When you child begins to lose interest or it’s time to move on to the next part of your day, let your child know that they can search for one more object and give them one to find (if you are short on time, make it something really obvious).
Alternatively, as you move to the next part of your day, ask your toddler to point out things along the way (e.g., you might say, “We have to go to the kitchen to make dinner. On our way, point to all the chairs you see”).

**Cleanup**

None

**Younger children**

While they may not be able to find the objects the same way toddlers can, include younger children by pointing to and naming objects in their immediate environment. They can also share in the excitement when your toddler finds what he or she was looking for.

**Older children**

Include older children in the game by letting them pick the objects for your toddler to search for or having them search for their own (more challenging) objects. While keeping it simple for your toddlers, you can increase the challenge for older children by having them find objects whose names rhyme with a particular word, start with a certain letter, are bigger than a particular object, etc. Using these characteristics requires them to think about object and specific details.

**Hints**

- Keep it simple! Your child will enjoy playing when he or she is successful; increase the challenge as your child seems ready. If you offer something too difficult, reassure your child and offer a simpler object.

**More!**

Play this game as you are driving in the car, grocery shopping, or waiting in line as a fun way to pass the time as well as an opportunity for your child to find and name objects in unique environments.

**Special needs accommodations**

Use a few photos of familiar items you have around the house so children can see a picture of what they are looking for, rather than trying to hold an image in their mind.