

# scientific thinking

**Support your child in the area of scientific thinking!**

*Scientific thinking* involves:

- Wondering about things.
- Asking questions.
- Making predictions (telling what might happen).
- Looking, listening, touching, smelling, and tasting to get information.
- Organizing information and talking about it.
- Comparing things by talking about how they are alike and different.
- Using words to explain why something happened.

When your child starts school, she will be more likely to do well if she is able to do these things.

You can help build your child's scientific thinking skills by the activities listed on the back of this card.

## scientific thinking

Activity Name	Age	Purpose	Things You Will Need
<b>Sink or Float</b>	3-4	To help your child to wonder about and investigate things, by making predictions and observing.	<ul style="list-style-type: none"> <li>■ Plastic tub (or bathtub)</li> <li>■ Water</li> <li>■ Four to five objects (cork, wood, shell, styrofoam)</li> <li>■ Sink/float chart (piece of laminated paper labeled "sink" and "float")</li> </ul>
<b>All About Oranges</b>	3-4	To help your child investigate things and collect information about his world using his 5 senses.	<ul style="list-style-type: none"> <li>■ The book: <i>The Very Hungry Caterpillar</i> by Eric Carle</li> <li>■ Scratch-n-sniff sticker of an orange</li> <li>■ Plastic orange</li> </ul>
<b>Exploring Your World</b>	3-4	To help your child notice things in his world by thinking, asking questions, and talking.	<ul style="list-style-type: none"> <li>■ Paper bag</li> <li>■ Magnifying glass</li> </ul>
<b>Science Toolbox</b>	3-4	To show your child that tools can be used to learn and see things in a different way.	<ul style="list-style-type: none"> <li>■ Magnet</li> <li>■ Mirror</li> <li>■ Flashlight</li> <li>■ Magnifying glass</li> </ul>
<b>Let's Feel It</b>	0-2	To support your child in exploring her world by using sight, sound and touch.	<ul style="list-style-type: none"> <li>■ The book: <i>Pat the Bunny</i> by Dorothy Kunhardt</li> </ul>

The School Readiness Activity Box Series, developed by Ready At Five, will help you build your child's skills in the seven Domains of Learning:

- Social & emotional development
- Physical development
- Language & literacy
- Mathematical thinking
- Scientific thinking
- Social studies
- The arts

To get activities in each of the above areas, visit [www.readyatfive.org](http://www.readyatfive.org).



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1

Help your child wonder about and investigate (to learn) things, by making predictions (guessing) and observing (seeing what actually happens).

For preschoolers (3- and 4-year-olds)

# sink or float

you will need

- Plastic Tub (or bathtub)
- Water
- Four (4) to five (5) objects (cork, wood, shell, Styrofoam)
- Sink/Float Chart (piece of laminated paper labeled "Sink" and "Float")

## Instructions

1. Fill the tub with water.
2. Show your child all of the objects.
3. Hand your child each object and talk with her about it, ask:
  - What is this?
  - What is it made of?
  - What do you think will happen if we put it in the water?
  - Do you think it will sink (drop to the bottom of the tub) or float (stay on top of the water)?
4. Test out your child's guess. Ask your child to place it into the water to see if it sinks or floats.
5. Ask your child: "Why do you think it did that?"
6. Help your child place the item on the appropriate side of the sink/float chart. (For example, the shell should be placed on the "sink" side of the sink/float chart.)
7. Repeat the steps with each object.

## sink or float

### Other Activities to Try

- Help your child gather other items and make predictions about whether they will sink or float.
- When giving your child a bath, fill a small plastic bottle with water. Ask your child whether the bottle will sink or float. Test out his guess by putting the bottle in the water. Now pour some of the water out of the bottle. Ask again, "Will the bottle sink or float?" Test out his guess by putting the bottle in the water. Now pour all the water out of the bottle. Ask again, "Will the bottle sink or float?" Test out his guess by putting the bottle in the water. Be sure to ask your child why he thinks the item first sank, then floated.

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You can help build your child's scientific thinking skills by doing this activity with your child.

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2

Help your child investigate (to learn about things) and collect information about his world using his 5 senses (sight, sound, smell, touch and taste).

For preschoolers (3- and 4-year-olds)

# all about oranges

you will need

- The book: *The Very Hungry Caterpillar* by Eric Carle
- Scratch-n-sniff sticker of an orange
- Plastic orange

## Instructions

1. Read the story *The Very Hungry Caterpillar* with your child.
2. When you've finished, ask your child to find the orange in the book.
3. Once your child finds the picture of the orange, say, "I have some other types of oranges. Let's look them."
4. Place the orange sticker, the plastic orange, and the book open to the picture of the orange in front of your child.
5. Allow him to explore the items and talk about how they are alike and different. Show her how to use her senses to explore the oranges. Help your child describe the oranges by asking:
  - How do they look?
  - Tell me about their color, size and shape.
  - How do they feel?
  - How do they smell?
  - What sounds do they make?
  - Can we taste them? Why or why not?

## all about oranges

### Other Activities to Try

- Try this same activity using a real orange. Ask your child to compare the real orange with the other “oranges.” Next, peel the orange. Talk about the inside of the orange. Ask: “Can you take it apart? Does it have seeds? Why?” Now have your child taste the orange. Have your child tell you how it feels, tastes, and smells.
- Compare different kinds of fruit to each other. Have her use her senses to explore the fruit (touch, taste, sight, sound and smell). Help your child describe the fruit. Be sure to ask her, “Which one is the best?”
- Help your child change the texture of different foods using tools or utensils in your home. For example, mash a banana or strawberry with a fork. Use a blender to make applesauce. Squeeze an orange to make orange juice.

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3

Help your child notice things in his world by thinking, asking questions, and talking about things!

For preschoolers (3- and 4-year-olds)

## explore **your world**

you will need

- Paper bag
- Magnifying glass

### Instructions

1. With your child, take a walk around your home, neighborhood, or park. Encourage him to collect things in the bag that he finds interesting.
2. When you return home, take the things out of the bag and talk about what was collected. Ask your child:
  - What did you find on our walk?
  - What do the items look like?
  - What do they feel like?
  - What do they smell like?
  - Are they alike or different?
3. Next, have your child look at the items through the magnifying glass. Ask:
  - What do you see?
  - Does it look different?
4. Ask your child to put the items into groups (sort). Ask your child, "How did you make your groups?" (If your child doesn't answer, ask him about how he sorted his things. For example, you might ask "Did you sort them by color?") *Continued on back...*

## explore **your world**

5. Ask him to put the collection into different groups. (For example, you might want to ask your child to sort the items by size, shape or color.)

### Other Activities to Try

- Go on a leaf hunt. Compare and sort the leaves by size, color, shape, and feel.
- Go on a bug hunt. Look at bugs through the magnifying glass. Talk about how the bugs are alike and different.
- On your next walk, bring some crayons and paper. When your child finds an object (such as a leaf), place the paper on top of the object and rub the crayon across the paper. Have your child look at the rubbing. Talk about the textures created. Now, let your child do his own rubbings of different objects.
- Go on a scavenger hunt with your child. Ask him to find:
  - Something big
  - Something soft
  - Something green
  - Something bumpy

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Show your child that tools can be used to learn and see things in a different ways!

For preschoolers (3- and 4-year-olds)

# science toolbox

you will need

- Magnet
- Mirror
- Flashlight
- Magnifying glass

## Instructions

1. Show your child the different tools (the magnet, mirror, flashlight, and magnifying glass). Ask her if she knows what they are and how they can be used. Say, "You can use these tools in different ways to learn about things. Let's find out what these can do."
2. Let her explore the room with the tools. Encourage your child's exploration by asking:
  - What things in the room will the magnet stick to?
  - What happens when you hold the mirror against objects? When you tip it up and down?
  - What happens when you shine the flashlight at the mirror? Hold it close to the mirror? Now hold it further away from the mirror. Is it different?
  - How do things look when you look through the magnifying glass? Hold the magnifying glass close and now further away. Do things look different?
3. Ask her other questions about what she is learning.

## science toolbox

### Other Activities to Try

- Go on a magnet hunt in the house. Find things to which the magnet will stick.
- Use the flashlight to make shadows.
- Move the mirror different ways and talk about how the image changes.
- Look at different things through the magnifying glass and talk about what your child sees.
- Make play binoculars by gluing together two cardboard toilet paper tubes. Have your child use this to observe and explore the world around him.

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5

Support your child in exploring her world by using sight, sound and touch.

For infants & toddlers (under age 2)

let's **feel it!**

you will need

- The book: *Pat the Bunny* by Dorothy Kunhardt

### Instructions

1. Begin by sitting with your child on your lap. Tell her that you are going to read a book.
2. Show your child the book, *Pat the Bunny*. Point to objects and talk about the cover.
3. Read the book to your child and let her feel each page.
4. Talk with your child about what she is feeling on each page. Be sure to describe the texture. (For example, say, "This is scratchy.")
5. When you have finished, go on a texture hunt with your child. Find things that your child can touch and feel, like your clothing, a blanket, the rug, a toy, or a paper towel. Be sure to describe each texture your child touches.
6. As your child gets older, ask your child to tell you about what she feels.

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