



The Cat in the Hat Knows a Lot About That!™

ACTIVITY

EXPLORING ANIMAL CAMOUFLAGE



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RANDOM HOUSE
CHILDREN'S ENTERTAINMENT



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Overview

In this activity, children will observe insects and other animals in their natural environments and notice the animals' coloring in comparison to the colors of their surroundings. They will look closely at worms and create a worm habitat in the classroom. As they investigate the worms' physical characteristics, they will notice how the worms' coloring helps them blend into the dirt. Over time they will observe how the worms' behavior, like wiggling down under the dirt for example, may also help them hide from predators.



The Science Idea

Camouflage is an adaptation that helps many animals avoid detection by predators or prey because it allows them to blend into their natural environments in ways that make them difficult to see or identify. Camouflage usually means that the color(s) of an animal's body or body parts is similar to the color(s) of the background, but it may also mean that the animal has body parts with shapes that are similar to other shapes in its surroundings. For example, a walking stick insect is shaped and colored like a stick. Camouflage may also be used in combination with behavioral strategies like staying very still and quiet, just as the gecko did when he hung quietly on a leafy branch in "Now You See Me."

Skills: Identifying patterns and relationships; communicating and collaborating; developing ideas
Age: 3–6 year olds
Content: Science

What You Need

- Several photographs illustrating animal camouflage from a website (see Resources for Teachers)
- Plastic terrarium or other plastic container
- Cover with air holes (optional)
- Large spoons or spades for digging
- Worms (collected or bought)
- Dirt, leaves, and other natural materials found outside
- Craft sticks





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- Newspaper or other paper
- Spray bottle of water
- [My Worm Observation](#) (below)
- Brown and black crayons or colored pencils for drawing

What to Do

Getting Ready

Before you take children outside, it is a good idea to go exploring yourself and identify an outdoor space where you can find insects and other small creatures that illustrate the concept of camouflage, preferably in an area that is undeveloped. If this is not possible, look for a local park or small overgrown area close to the school. If you live in an urban area, you may find the books listed in Look in a Book useful for helping you think about finding animals. You may find, depending on your area, a variety of insects and small creatures like ants, grasshoppers, praying mantises, caterpillars, beetles, snails, and butterflies. You may find salamanders, worms, and pill bugs in the dirt. If there is a pond or other natural water source available, you may find more insects, including dragonflies and damselflies. If you are near a wilder area, you may be able to observe larger animals that use camouflage, like toads and frogs, many kinds of turtles, rabbits, or even deer.

Look for a spot where you can dig and find worms with children, or locate a place to buy worms like a bait shop or pet supply store.

Playing Hide-and-Seek

Start by asking children if they have ever played Hide-and-Seek and invite them to describe how the game is played. Then invite children to play a simple game of Hide-and-Seek in the playground, the classroom, or another contained area. After the game, have a conversation with them about hiding and seeking by asking questions like “Where was the easiest place to find someone? Why do you think so?” and “Where was the hardest place?”

Talking About Animals

1. Talk with children about their game of Hide-and-Seek and other times when they may have played hiding games. Ask “What makes a place a good spot to hide?” and “What are some things you did so that nobody could find you?” Suggest the idea of camouflage by asking “How might what you are wearing make a difference?” “What do you think makes it easy to find someone?”





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2. Mention to children the idea that sometimes animals need to hide. Ask them why they think that might be true. Ask children for any examples of animals that may hide behind things or inside of things the way they did when they were playing Hide-and-Seek. If they need help, ask questions like “How do you think a mouse might hide from a cat?” or “How might a rabbit hide from an owl?”
3. Introduce camouflage by saying that some animals hide in a different way. Instead of going into something or getting behind something, they hide using the colors of their bodies. Ask children to describe their ideas about how animals may hide that way.
4. Show children some photographs of animals that are camouflaged, for example, a white hare in snow, a brown bear in the woods, or a frog in the grass. Point out the color of the animal and the background and ask “What do you think might make it hard to see this animal? Why do you think so?” Then show some photos of animals that have body parts with shapes like their surroundings, like a praying mantis or a walking stick. Ask “How do you think this animal hides? “What do you notice about the shapes of this insect’s body and legs?” and “How does it look like the things around it?”
5. Mention to children that today you are going to go outside and look for insects and other animals in their natural environments to see what you can notice about how easy or how hard they are to see. Remind children that they may have to look very hard because some animals may be very hard to find.

Observing Animals Outdoors

Take children on an outdoor walk to the area you have identified. Work with children in small groups to look carefully through the grass and dirt for insects and small creatures. When you find one, ask questions that draw children’s attention to the animal’s physical characteristics compared to its surroundings, like “Was it easy or hard to see? Why do you think so?”

Encourage children to notice the creature’s hiding behavior, by asking “What do you notice about the animal’s movement when we disturbed it?”

Planning and Making a Terrarium

- Mention to children that there are other animals that hide using their own bodies. Ask them about worms and encourage them to share a time when they observed worms. Invite them to share their ideas about when worms need to hide, and what kinds of animals worms need to hide from. Ask questions like “How do you think worms use their bodies to hide in the dirt?”





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- Show the children the terrarium, and mention that together you are going to make a temporary home for worms in the classroom by setting up a terrarium. Tell them that first you are going to go out and look for worms outdoors so that you can see what kinds of things worms need to have in the terrarium. Ask “Where do you think we should look? Why do you think so?” “What do you think worms will need to eat?”
- Take children outside (in small groups if possible) to a spot where worms live, and invite them to use large spoons or spades to dig carefully until they find some worms. Encourage children to observe the worms in the dirt and in the grass, and describe what they look like and what they are doing. Ask questions like “Where would be a better place for a worm to hide from a hungry bird?” “Why do you think so?”
- Fill the terrarium about halfway with dirt that the children dig up. Add some decaying leaves and any other safe, natural materials that are nearby that the children suggest.
- Collect worms with children and/or buy worms and put them in the terrarium.
- Place the terrarium in a safe area of the classroom out of direct sunlight where children can easily observe the worms.
- Keep the soil in the terrarium moist at all times.

Observing Worms

- Invite children to carefully remove the worms from the terrarium so they can look at them more closely. Provide craft sticks for children who don't feel comfortable handling worms directly. Place the worms on newspaper or other paper, and out of direct sunlight. Keep a spray bottle of water handy and spritz worms with the water periodically. Remind children to carefully replace the worms back in the terrarium when they are done observing.
- Over the next few days, encourage children to observe the worms regularly in and out of the terrarium. Ask questions like “What do you notice about the colors and shapes of the worms' bodies?” and “How does the worm move on the paper? How does it move through the dirt?”
- Encourage children to notice elements of the worms' bodies that illustrate camouflage: “Is it harder to see the worms when they are in or out of the terrarium? Why do you think so?” and “What if the worms were the color of the (news)paper?”
- Keep copies of [My Worm Observation](#) (below) and crayons or colored pencils in different shades of brown and black near the worms. Encourage children to make observational



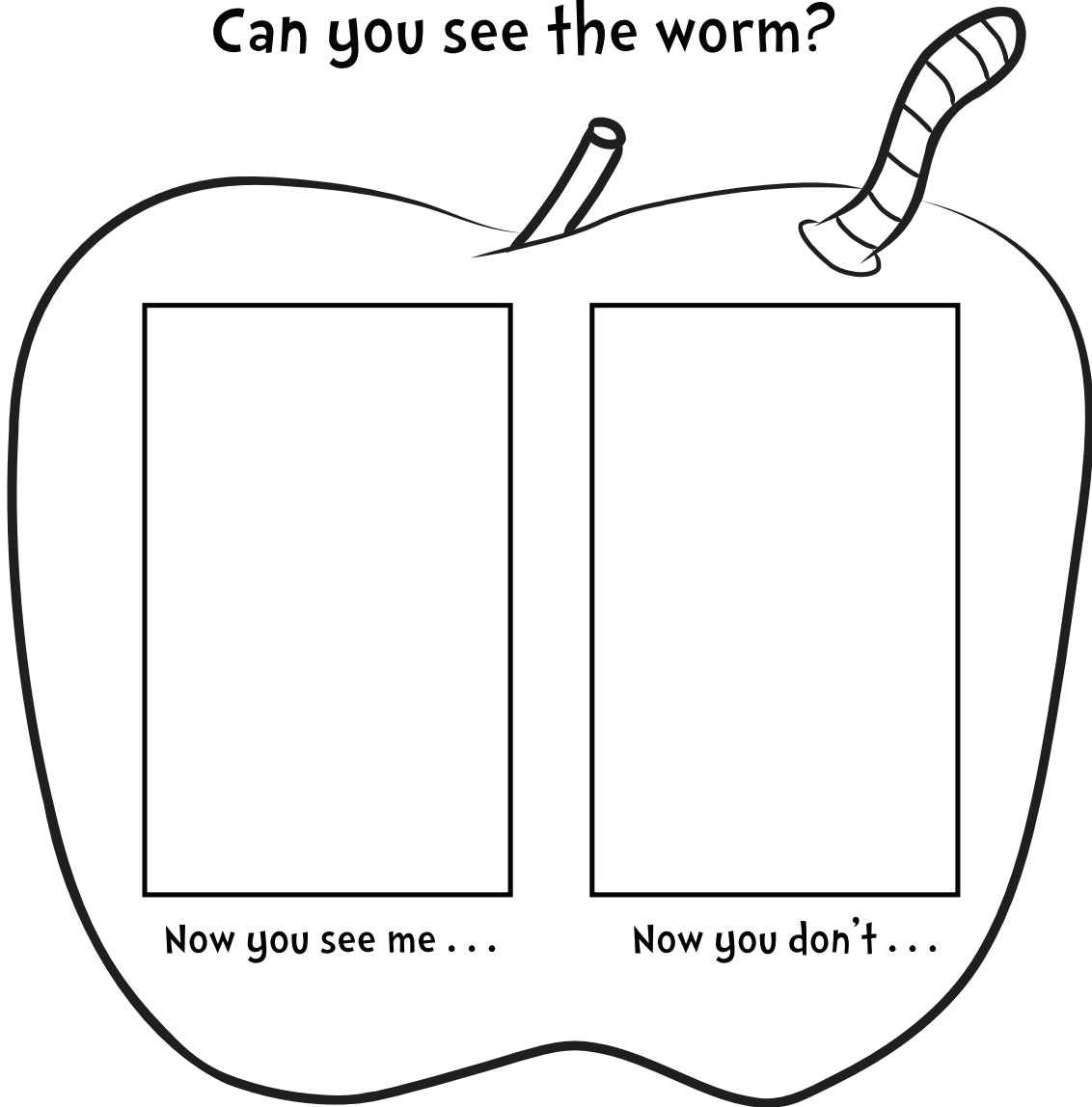


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My Worm Observation

Can you see the worm?



Now you see me . . .

Now you don't . . .

Help children observe and draw worms against different backgrounds. For example, have them draw the worm AND the background when the worm is on dirt and when the worm is on light-colored paper.





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drawings of the worms both in and out of the terrarium, including their surroundings, dirt, or paper. What do they notice about the worms' colors compared to that of the background? Ask "Which surface would be better for the worm to hide on?"

- Introduce the word camouflage in the context of children's observations. Encourage children to think of other behaviors that might help the worm avoid predators, by asking "What other things does the worm do to hide?"

Reflecting on Worm Observations and Thinking About Camouflage

Have a conversation with children about their worm observations. Invite them to share their drawings of worms with the group and describe what they noticed about the characteristics and behavior of worms. Ask questions that encourage them to think more about animal camouflage, for example: "We've seen how the worms can hide in the dirt because they are the same color as the dirt. What other animals can you think of that hide that way?" "What do you think you could wear to hide outside?" "Would it matter where you were trying to hide?"

Take It Further

What You Need:

- Large flat tray with sand, green leaves, pebbles, and other natural materials
- Dark construction paper
- Small flashlights

Do some further investigations of worm behavior:

- Put out a tray containing a variety of natural materials like dirt from the terrarium, sand, small rocks, and green leaves. Then put the worms in the middle of the tray and invite children to predict what they think the worms will do. Encourage them to observe which materials the worms move toward.
- Fold some dark pieces of construction paper in half and lay them on the table like a tent. Place worms on newspaper on the table and use flashlights to shine a light near the worms. Encourage children to notice how worms move in relation to the light.

Note: After several days return the worms to their natural environment outdoors unless you are planning to set up a permanent home for them.



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Create a worm composting bin in the classroom:

Use a resource like *Worms Eat My Garbage: How to Set Up and Maintain a Worm Composting System* by Mary Appelhof, illustrated by Mary Frances Fenton. Kalamazoo, MI: Flower Press, 1997.

Go on an Adventure!

Take children to visit a reptile or amphibian exhibit at the zoo, or even at a local pet shop, and observe frogs, snakes, and turtles in terraria set up to resemble their natural habitats. Often you need to look hard to see these animals because they blend in so well with the backgrounds. Draw children's attention to the physical characteristics that illustrate camouflage along with other behaviors of these animals that make them so hard to find.

Literacy Connection

What You Need:

- Photographs of animals from one of the websites (see Resources for Teachers)
- Colored construction paper
- Markers for writing
- Scissors and glue

Make a "Now You See Me, Now You Don't!" book. Print out two color copies each of some photographs of animals from one of the websites (see Resources for Teachers). Provide colored construction paper, and be sure to include paper in the same and different colors as those of the animals in the pictures. Provide each child with two copies of the same animal. Invite each child to cut out both pictures of the animal and place them on different colors of paper. Ask "What do you notice about how much the animal blends in or stands out on each color?" Encourage them to glue one picture of the animal onto a paper of a very different color and write "Now you see me!" at the bottom of the picture. Then invite them to glue the animal's picture on a matching color and write "Now you don't!" Put the children's pictures together to create a book.

Look in a Book

Use these books to help children find out more about animal camouflage and worms:

Now You See Me . . . (The Cat in the Hat Knows a Lot About That![™]), by Tish Rabe, illustrated by Christopher Moroney. New York: Random House, available January 2011.



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Peterson First Guide to Urban Wildlife by Sarah B. Landry and Roger Tory Peterson. Boston: Houghton Mifflin, 1998.

Take a City Nature Walk by Jane Kirkland. Lionville, PA: Stillwater Publishing, 2005.

Wiggling Worms at Work by Wendy Pfeffer, illustrated by Steve Jenkins. New York: Harper Collins, 2004.

Wonderful Worms by Linda Glaser, illustrated by Loretta Krupinski. Minneapolis, MN: Millbrook Press, 1994.

New Word

Camouflage: An adaptation that allows a plant or animal to remain undetected in its natural environment by blending in to the surroundings through color, design, or shape of parts

Terrarium: A container for keeping small animals and/or plants

Video

Watch the related video clip at PBS Parents (www.pbsparents.org/catinthehat/)



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