

Young children naturally build knowledge by being curious about the world around them.

When you do science with your children, you can share their sense of wonder about the natural world. They'll develop self confidence when they ask and answer their own questions.

Photo Matching (Exploring Magnification)

A magnifying glass is a tool used by scientists. When we look through its curved lens, things look larger and we can see detail we might not be able to with just our eyes.

By using zoomed-in photographs of objects, we can mimic the effect of a magnifying glass and explore looking at things from a different perspective. A camera has a curved lens like a magnifying glass does.

What You Need

- Common objects
- A digital camera and photo printer
- Magnifying glass

Hands-on

1. Collect 6-10 objects that a child would recognize. A few of the things should have interesting texture or fine detail.
2. Take a normal scale photograph of each object, then a zoomed-in photograph (up close, showing detail) of each object.

Hint: use the macro function on your camera for good photographs.

3. Present the children with the objects and the regular photographs. Have them match the object with each picture.
4. Next, introduce the zoomed-in photographs with the objects. Try matching them again.
5. Use the magnifying glass to look at the objects close up. Hint: to properly use a magnifying glass, hold it close to the object, not close to your eye.
6. Use the magnifying glass to explore more objects in the room or outdoors.

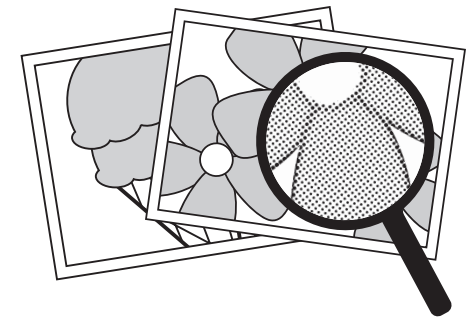


Questions to Ask

- Can you match these items to their pictures?
- How did you know that these two went together? What was your clue?
- What do you see with the magnifying glass?
- What other things would you like to look at up close?

How to get the most out of your explorations:

- **Dress for the mess**
Science explorations can be messy.
- **Take your time**
Play for as long as the activity holds your child's interest. Don't rush towards the 'right' answer.
- **Be curious**
Ask "What would happen if..." and then find out. Let your child's questions guide you.



7. What Next?

- Explore your home and backyard with a magnifying glass to notice lots of details you wouldn't see otherwise. Try looking at pictures in a newspaper, cloth, your own skin, and objects in nature.
- Have children draw what they see with and without the magnifying glass.
- Let children take pictures with a digital camera and experiment with the zoom feature.
- Check out *National Geographic Little Kids* magazine or website for their zoomed in photos of everyday objects.

Fingerprints and Footprints

Everyone has a unique pattern of lines on their fingertips called fingerprints. The lines are important for helping you grip things with your fingers. Everything you touch will have an imprint of your finger left from the oils in your skin. No two fingers are exactly the same. Scientists, detectives and police use copies of people's fingerprints to help identify them.

People and animals have different shaped feet. You might notice human footprints and animal tracks when you are out for a walk.

What You Need

- Washable ink pads
- Paper
- Magnifying glass
- Large paper (butcher paper roll)
- Shallow bucket or pan with water or diluted paint

Hands-on

1. Make sure your fingers are clean.
2. Touch your fingers to the ink pad and then gently to the paper.
3. Use the magnifying glass to look at your fingerprints close up.
4. Take off your shoes and socks.
5. Step carefully into water or diluted paint and walk across a large piece of paper.
6. Take a look at the trail of footprints you left behind.



Questions to Ask

What do you notice about your fingerprints? Do different fingers have the same pattern? How are your fingerprints different from your friend's?

What do they look like up close?

How many footprints did you leave? Do they change? How are your two feet the same? How are they different?

Are your feet the same size and shape as your friend's? What else do you notice about them?

What Next?

- Use your fingerprints to make art: turn them in to bugs, flowers and people. See kids.nationalgeographic.com/Activities/Crafts/Fingerprint-art for a sample.
- Make an assortment of shoe prints in play dough or water. Can you tell which shoe left which footprint?
- Tell a story by walking toy animals or dolls through paint and across paper. Can someone else figure out what happened by looking at the tracks?
- Roll toy cars through water or paint to leave tire tracks.
- Go for a walk and see what kind of animal tracks you can find in the snow, on the sand or in mud. Use an animal tracking book from your local library to figure out what kind of animal might have visited here.



Looking for more?

More science activities for young children can be found at

scienceworld.ca/preschool.html

This website has short videos, games and activities for 3–5 year olds

peepandthebigwideworld.com

Our favourite books:

Marvelous Moving Things.

ed. Mickey Sarquis

ISBN 978-1-883822-53-8

Preschool Pathways to Science

by Rochel Gelman, Kimberley

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