



Compasses

Each point on the edge of a circle is exactly the same distance from the center. In this activity, families create a simple compass and make perfect circles.

What you'll need

For the exploration:

- Chart paper
- Paper
- Pencils (2 per person)
- Paperclips
- A collection of different types of compasses

Icebreaker

To start, invite families to tackle this riddle: What do a bagel, a ball, and a banana all have in common?

Answer: If you slice them through the center, you'll always find a circle.

Send families on a circle scavenger hunt around the room. Ask them to make a list of all of the circles they can see. After a few minutes, invite families to share at least one item from their list and make a giant list on chart paper.

Collection

Pass out the collection of compasses so that children and adults can begin to experiment with the different types of compasses and discover how they can help people make perfect circles.

Exploration: Circles All Around

In today's activity, you'll be experimenting with the compass, a simple tool to help you make perfect circles.

- To make a compass, string together a few paperclips. Put one pencil in one end of a paperclip chain. This will be the stationary or still pencil. Put the other pencil in the other end of the paper clip chain. Pull the paperclip chain taut. Keep one pencil still and move the other pencil around as you keep the chain tight. When you are finished, you should have a circle!
- To continue the exploration, change the number of paperclips in the chain to change the size of the circle. Invite participants to try to make a circle the size of a hand. Encourage them to begin thinking about the length of the radius (how many paperclips is it from the center to the edge of the circle?) and the length of the diameter (how many paperclips is it from one edge to the other edge of the circle, going through the center?) What is the relationship between the radius and the diameter?
- Challenge participants to make a circle large enough to fit a person inside. What about using the compass to make concentric circles—circles that share the same center point and get smaller and smaller? Can they think of other ways to make compasses?
- After families have been exploring for some time, ask them to come together to share some of their discoveries or the different circles that they've made.