



## Tops

Families create their own versions of a simple toy and observe spinning circles.

### What you'll need

*For the exploration:*

- A collection of different types of tops
- Used CDs or DVDs (at least one per person)
- Marbles (at least one per person)
- CD label stickers
- Plastic bottle caps
- Coins, washers, or other flat weights
- Markers
- Scissors
- Paper
- Chart paper

### Icebreaker

Invite families to make a list of all of the different ways they could make circles using their bodies. After they have made individual lists, make a giant list on chart paper. Ask participants to imagine that they are twirling around with their arms flying out to their sides. What shape would someone looking down from above see? Think about ice skaters, folklorico dancers, or shot put throwers. Now, think about spinning objects: an egg beater, a dreidel, a game spinner. Spinning things always make circles. Why do you think this is?

### Collection

Pass out the collection of tops so that families can enjoy experimenting with spinning objects and the different types of tops that are available for play. Challenge them to see how long they can keep one top spinning.

### Exploration: Topsy Turvy

*In today's activity, you'll make your own spinning top and experiment with the best ways to make it spin.*

- After they have played with the tops collection, challenge participants to think about how long they think they can get a homemade top to spin.
- Ask them to create a top and then modify it so that it can spin for at least ten seconds.
- To make a top, tape a marble in the center of a CD. Then tape a plastic bottle cap on the other side of the cd in the center. Try spinning the top.
- Pass out washers, coins and other flat weights and encourage families to make changes to their tops to see if they can spin longer.

- Ask: How does your top spin now? What if you put the coin in a different place on the circle? Does it spin longer now? What do you think might happen if you add more coins? Do you need an even number of coins to make it spin well? Do you think that you can create a top that can spin for longer than ten seconds? What is the key to your success?
- Participants can also create a design for the top of their spinning tops. Using the CD stickers, they can draw an interesting pattern and stick it onto the top of their tops. How does the drawing change when it is spinning?