



# WHAT MAKES THIS SHADOW?

## ..... MYSTERY SHAPES .....

Shadows are fun to play with because they show only the outline shape of an object, and you can make the actual object a mystery! In this activity, you and your child explore how some objects can make very surprising shadows!



### PARENT TIPS

- Do this activity at night in a darkened room. Use a strong flashlight, such as one powered with a 9-volt battery.

- Start with a cylinder shape (we suggest a soda can) and have your child practice casting different shape shadows.

- Help your child identify the regular geometric shapes of the shadows on the wall (rectangle, square, circle, triangle, etc.).

- Start with objects that have simple outline shapes and then progress to more difficult ones. To make the game easier, show the 'guesser' the collection of objects that will be used beforehand.

- Other objects to try:  
Plastic water bottle  
Toy football  
Coffee mug  
Funnel or ice cream cone  
Wooden blocks

### WHAT'S THE MATH?

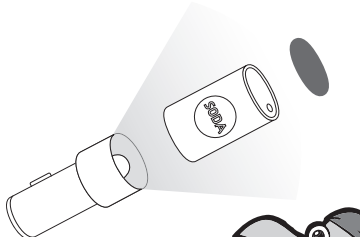
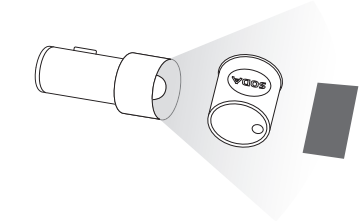
#### Geometry: Point of View

### HERE'S WHAT YOU NEED!

- Flashlight
- Soda can
- Cereal box
- Other objects  
(See "Parent Tips" for ideas.)



- ### DIRECTIONS FOR KIDS
- 1** Hold a soda can on its side at eye level. Look only at the shape made by the outline of the can. (Closing one eye helps.) Find a way to hold the can so the outline shape looks like a rectangle.
  - 2** Now hold the can in one hand and shine your flashlight on it so it makes a shadow on the wall. Experiment until the shadow is shaped like a rectangle.
  - 3** What do you have to do with the can and the flashlight to make the shadow look like a circle? (Shine the light straight onto the bottom of the can.) If all you saw was the shadow, would you guess that the object was a can?
  - 4** Try Steps 1 to 3 again with a cereal box. How many different shadow shapes can you make?



Directions continue on next page.

