



# MYSTICAL MIRRORS: INVESTIGATE REFLECTION AND REFRACTION

Clark and Karoline need to rescue The Grand Jerome from the Hall of Mirrors—a carnival illusion that can make you question everything you see. Create your own illusions with these mirror experiments!

## YOU'LL NEED:

- Paper
- Markers or crayons
- 2 small plastic mirrors with straight sides



## REPAIR THE MAGIC COIN

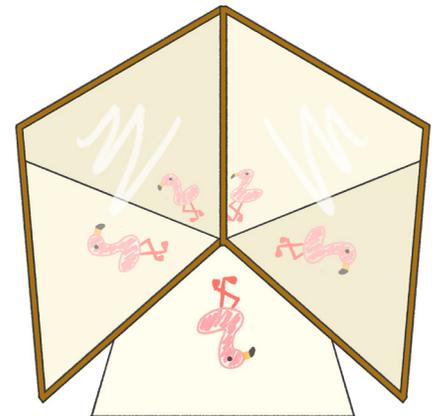
Draw half of The Grand Jerome's coin on a piece of paper. Stand a mirror along the flat edge of the coin you drew, and just like magic, you'll see a whole coin! Now place the second mirror next to the first so their edges are touching on one side, with the coin between them. How many coins do you see? What happens if you angle the mirrors toward each other? How about farther away?



## COMPLETE THE CAROUSEL

Draw an Adventure Kingdom carousel animal. Can you use the mirrors to create the illusion of a full carousel?

**What other patterns can you create or complete with mirrors?**



## FUN FACT

For a mirror to work correctly, it has to be a perfectly flat, smooth, reflective surface. When mirrors are bowed in (concave) or out (convex), our eyes see a distorted image—just like you'd see in a fun house or hall of mirrors!

## HUNT FOR THE GRAND JEROME

Reflected light bounces off a surface, but refracted light passes through. You can find both reflective and refractive surfaces around your house (or classroom).

For this experiment, you'll need a partner, two flashlights, and a dark space! Creep through your own hall of mirrors, aiming your flashlights at different objects. Decide together if they have reflective or refractive properties. Hint: Check out the oven door, a glass of water, and even the silverware (or anything else you can find made of glass, metal, or another surface you think might reflect or refract light!)

