





### What you'll need

#### Special materials

Templates from [rigb.org/experimental](http://rigb.org/experimental), ideally printed on card.

- Scissors
- Pencils
- Sticky tape
- String
- A mirror

### What to do

#### Being safe

Adult supervision is recommended for cutting out the templates.

**Introduction:** If you already have one made, you can show your child/children a working thaumatrope or phenakistoscope. Use some of the questions below to get them thinking about what is happening.

#### Activity:

##### Thaumatrope:

Cut out the templates from [rigb.org/experimental](http://rigb.org/experimental). If drawing your own, make sure that both pictures are the same way up when you look at them before folding.

Turn your thaumatrope over and lay the string across the back of the template so that it goes across the middle of the bottom circle with 15-20cm of string on either side. Tape it in place.

Now fold the template in half so the string is on the inside and the pictures are on the outside. One picture will now be upside down.

Hold the ends of the string between your thumb and forefinger on each hand so that the disc is hanging in front of you with the picture you can see the right way up.

Now twist the string in your hands so the disc spins.

You should see both sides come together into one picture.



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**What to do**  
(continued)

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**Phenakistoscope:**

Cut out the template from [rigb.org/experimental](http://rigb.org/experimental). If drawing your own, make sure every picture is in the same position relative to the slots, always with the bottom of the picture towards the centre of the disc.

Poke a pencil through the centre of the disc.

Stand in front of a mirror and hold the phenakistoscope so that the images face the mirror.

Position yourself so you are looking through the slots in the disc at the reflection of the images in the mirror.

Spin the disc.

You should see the images animate.

**Follow up:** Get your child/children talking about how the thaumatrope and phenakistoscope work. Both in what they do and in the way our brains process what they are seeing. You can use the questions below to get them thinking.

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**Questions to ask children**

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**Before the activity:**

What types of cartoon/animation do you know? How do they make drawings or models seem to move?

**After the activity:**

What differences are there in the images?

What would happen if we spun the disc in the opposite direction?

What if we spun them faster/slower?

What would happen if the phenakistoscope had more/less drawings?

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