

Motion



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1 'How would you describe motion?' - 5min

The goal of this section is to see what is the idea every kid has of motion and to allow them to get progressively into the subject by thinking about it by themselves. Let's not give them a formal definition of motion. This way, they will get the key elements of motion throughout the module.

2 The role of memory - 10min

Is it possible to know from a picture if an object is moving?

Show the kids some pictures (see powerpoint). Let them discuss which pictures show a moving object.

Having seen these pictures, ask the kids what information does one need to understand that an object is moving.

The basic information one needs to understand that an object is moving are its current position AND its position a moment ago. (blurred images stock such information)

Our eye and brain act just like a camera. If an object is moving, we not only see its current position but we remember the position in which it was an instant ago. The succession of such positions at consecutive instants makes us see motion! That is why this short-term memory is very important for understanding motion. This short-term memory is called **Persistence of vision**

3 Motion and cinema - 10min - [Video]

In the early days of cinema, people made a lot of similar images with slight differences between them. This way, when seeing all the images one after the other one felt like he was seeing **motion**! Let's show the kids a short video in which we see how this works (see powerpoint).



What is Persistence of Vision? (Mr. Wizard)

4 Your own movie - 30min - [Activity]

It is now time for the kids to make their own movie! To do so, **they will need a post-it block** each. With a pencil they will have to draw many consecutive images in every sheet of the post-it block. This way, in the end, when going through the sheets of the post-it block very fast they will feel like they are watching a movie, again thanks to **Persistence of vision**. Tell them to be careful, the order in which they want to show the images is reversed, the first image of the movie has to be drawn in the **last** sheet of the post-it block, and so on!

