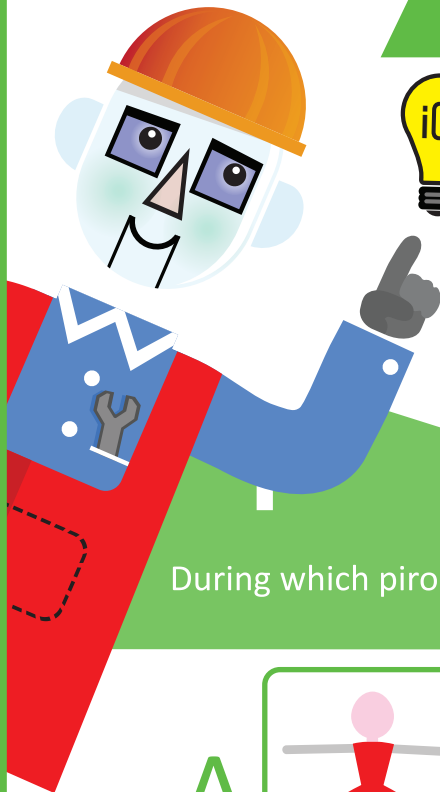


Challenges in the Science at Home Exposition will uncover the phenomena you encounter every day at home and at school. Try to see whether you understand how things work around you!

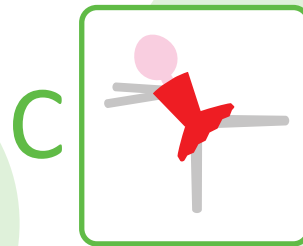
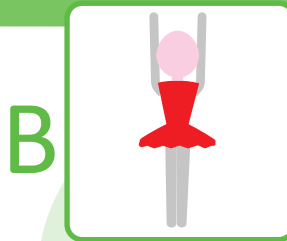
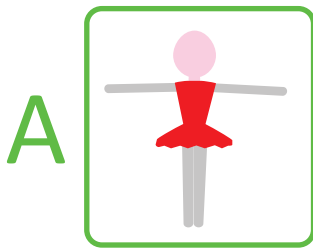


1. PIROUETTE

1. What happens if you do a side leg lift while spinning?

- a The angular velocity of rotation increases
- b The angular velocity of rotation decreases.
- c Nothing changes.

During which pirouette will the figure skater spin fastest?



2. BIG PULLEYS

Lift yourself, in turn, on each of the 3 pulleys. Draw the pulley/hoist on which you can lift yourself using the least force in the window.

3. ARCHIMEDES' PRINCIPLE

What determines the value of the buoyant force acting on the child in the tub? You can choose from several factors:

tub volume

tub material

volume of submerged child

density of the water in the tub

colour of the liquid in the tub

child's weight



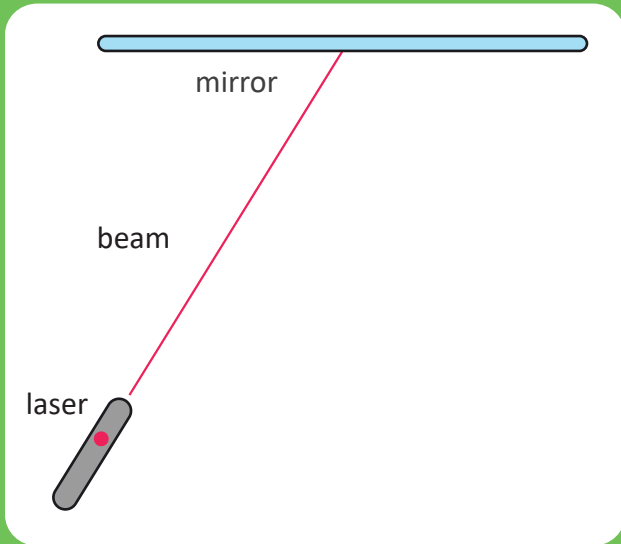
4.

REFRACTION OF LIGHT THROUGH A PRISM

The first physicist who succeeded in breaking white light into different colour components was Isaac Newton. What colours could he observe during the refraction of light through a prism?

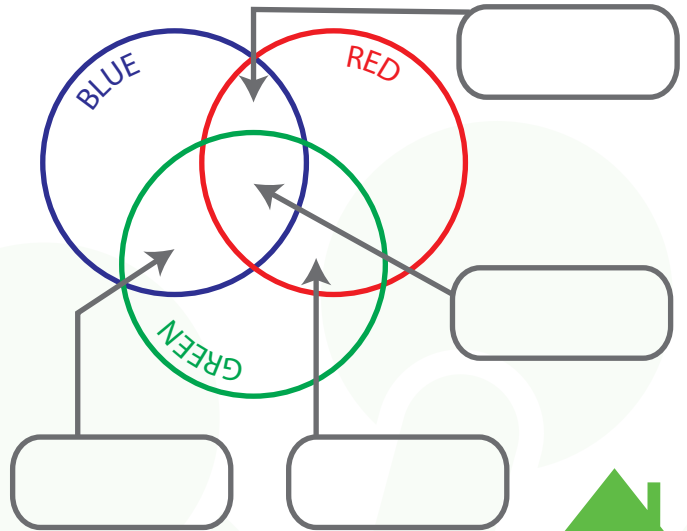
5. LASER LABYRINTH

Were you able to direct the light through the labyrinth to the target? Draw the light beam reflection from the mirror:



6. COLOR MIXING

Fill in the picture what colors are formed during additive mixing of these colors. The same principle is used e.g. in displays.



7.

ELECTROMAGNETIC INDUCTION

How can you tell whether you have induced a voltage in the coil?

What voltage did you induce?

Only negative

Only positive

None

Both positive and negative

What material do you have to use to induce voltage?

Wood

Plastic

Magnet

Metal

