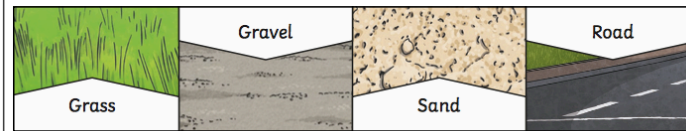


Year 3 Science Knowledge Organiser - Light and Forces

Knowledge: What is friction?

1. Different surfaces create different frictions
2. The amount of friction created depends on the roughness of the surface and the object
3. It also depends on the force between them - the more force and less friction the quicker the object moves

Can you describe how a car would move across these surfaces?



Vocabulary

1. Light beam	Directional projection of light energy radiating from a light source.
2. Absence	Lack of something.
3. Enquiry	An act of asking for information.
4. Light source	Anything that makes light, whether natural like sun or unnatural like a torch.
5. Blocked	Obstruction making movement or flow difficult or impossible.
6. Reflect	Throws back (heat, light, or sound) without absorbing it.
7. Surface	The outside part or uppermost layer of something.
8. Periscope	An apparatus consisting of a tube attached to a set of mirrors or prisms, by which an observer can see things that are otherwise out of sight.
9. Magnetic strength	Physical quantity measures of the intensity of the magnetic field.
10. Resistance	Opposition that a substance has on another.
12. Decelerate	Reduce or cause to reduce in speed.

Knowledge: Forces

1. Forces change the motion of an object
2. It can make it start to move, speed up, slow down or make it stop

Examples of push forces

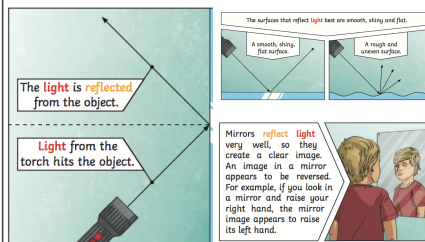


Examples of pull forces



Light

1. Light is a beam of energy that travels in a wave from a source (like torch)
2. Light travels in a straight line.
3. When light hits an object, it is reflected (bounces off).
4. If the reflected light hits our eyes, we can see the object. You must have light to be able to see.
5. Some surfaces and materials reflect light well.
6. Other materials do not reflect light well.



How we see things



Did you know... light that we see from the sun actually left the sun ten minutes before we see it!

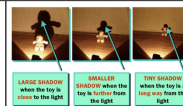
Opaque, Transparent or Translucent

- | | | |
|--|---|--|
| 1. Opaque object does not let light pass through it. | 1. Transparent objects like light travel through them easily. | 1. Translucent objects let some light through them properly.
2. They scatter the light so we can't see through them properly. |
|--|---|--|



Shadows

1. Shadows are created when an opaque object blocks the light.
 2. The light cannot go through or around the object, so a darker patch is created behind the object.
1. The closer object is to a light source, the more light it blocks. This means the shadow is bigger.
 2. If an object is far away from the light source, it does not block out much light, so shadow is smaller.



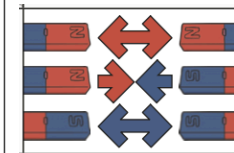
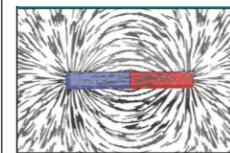
Can you talk to your partner about how we can keep safe in the sun?



Did you know... a maglev (magnetic levitating) train moves by the force of magnetism. Magnets under the train and on the track push against each other, making the train hover up to nearly 10mm above the track. The train does not have an engine, but can reach speeds of up to 360mph.

Magnetic Field

- | | | |
|---|---|---|
| <ol style="list-style-type: none"> 1. Magnetic field is invisible and is stored-up energy 2. Iron filings can show what happens in a magnetic field | <ol style="list-style-type: none"> 1. Every magnet has two sides - north and south 2. Like poles (NN or SS) repel (push apart) 3. Opposite pole (SN) attract (pull together) | <ol style="list-style-type: none"> 1. Needle in a compass is a magnet 2. A compass always points north-south on Earth |
|---|---|---|



Magnetic / Non magnetic

The materials which get attracted towards a magnet are magnetic. The materials which are not attracted towards a magnet are non-magnetic materials.

Magnetic



Non magnetic

