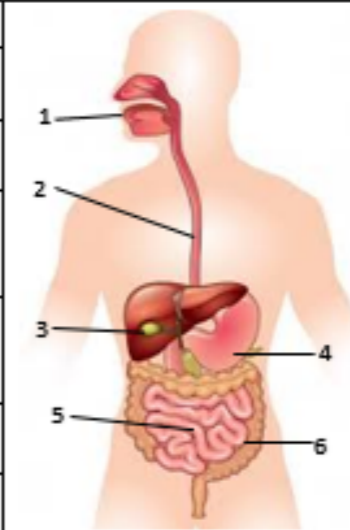


1. Nutrients		
Nutrient	Where it is found	Role in the body
Carbohydrate	Potatoes, rice, pasta, bread	Main source of energy
Lipids	Oils, butter, cheese, meats	Provides energy and insulation
Protein	Meat, fish, dairy	Growth and repair of body tissues
Vitamins and minerals	Fruits and vegetables	Essential in small amounts to keep you healthy
Water	Fruit, vegetable and drinks	Needed in all cells and body fluids
Fibre	Fruit, vegetables and cereal grains	Provides bulk to food to keep it moving through the digestive system

2. Effects of an unhealthy diet			
A balanced diet involves eating the right amount of nutrients for your body to function.		Not eating enough of a nutrient can cause a deficiency (lack of) which can lead to disease.	
Under-eating	Over-eating	Deficiency	
Some people do not eat enough and become underweight.	Some people eat more than their body needs and become overweight	Some people do not eat enough of a particular nutrient.	
Risks	Risks	Diseases	
Suffer from health problems e.g. poor immune system	Heart disease	Vitamin A	Night blindness
Lack of energy, tiredness	Stroke	Vitamin C	Scurvy
Likely to suffer from deficiency diseases	diabetes	Vitamin D	Rickets

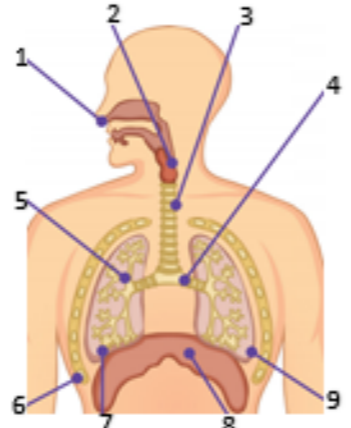
3. Digestive system		
A group of organs working together to break our food down so our body can absorb it.		
Enzymes are biological catalysts that help our bodies to break down food.		
	Organ	Function
1	Mouth	Teeth and saliva start the digestive process
2	Gullet	Produces saliva which contains enzymes
3	Liver	Where bile is produced to break down fats and neutralise acid
4	Stomach	Muscular bag that churns food containing acid and some enzymes
5	Small intestines	Where nutrients are absorbed into the blood stream
6	Large intestines	Where water is absorbed back into the body from digested food

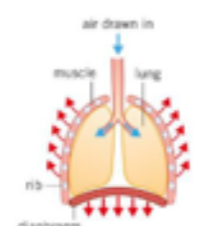



4. Smoking, drugs and alcohol	
A drug is a substance that alters the way our body works.	
Alcohol is a drug that slows down reactions in the body and damages the liver.	
Cigarettes are very harmful and contain a range of harmful substances	
Substance	Effect
Tar	Irritates and narrows airways. Contains chemicals that can cause cancer
Nicotine	An addictive drug that speeds up the heart and narrows blood vessels
Carbon monoxide	A poisonous gas that stops blood from carrying oxygen

5. Breathing system

1	Nasal cavity
2	Larynx
3	Trachea
4	Bronchus
5	Bronchiole
6	Rib
7	Alveolus
8	Diaphragm
9	Lung




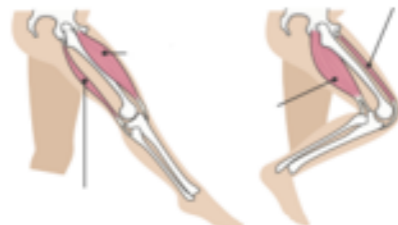


Inhaling – Breathing in		Exhaling – Breathing out	
	muscles between ribs contract ribs are pulled up and out diaphragm contracts and flattens volume in chest increases pressure in chest decreases Air rushes into the lungs	muscles between ribs relax Ribs are pulled in and down Diaphragm contracts and flattens Volume in chest decreases Pressure in chest increases Air is forced out of the lungs	

Challenge Questions

1	Why are fruit and vegetables important in a balanced diet?
2	Why does mouth to mouth resuscitation work?
3	Why are enzymes vital for digestion?
4	What are the health risks associated to smoking?

6. Skeleton and muscles

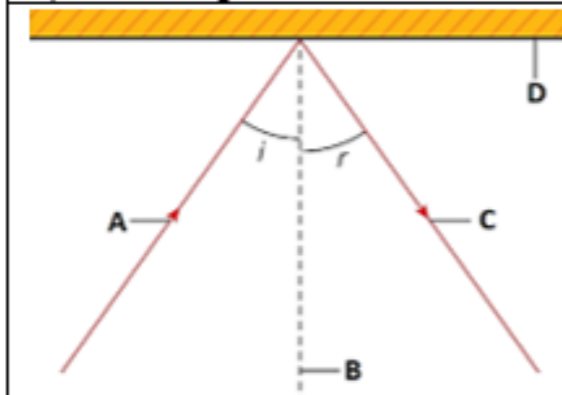
The skeleton has 4 essential functions			
Protection	Support	Movement	Making blood cells
Bones protect our vital organs e.g. skull protects the brain	Without our bones, our body would not be able to support itself	It works with our muscles to move our body	Bone marrow in the middle of bones produces red and white blood cells
Movement In order to move, our skeleton has joints			
Hinge joint		Ball and socket joint	
	Examples: Elbow, knee,		Examples: Hips, shoulder
Fixed joint			
Examples: skull, pelvis			
There are many tissues that work together to support movement			
Muscles	Tendons	Ligaments	Cartilage
Attach to bones. Work in pairs to make the bone move.	Tissue that connects the muscle to the bone.	Tissue that connects the bones together.	Smooth, hard coating on joint bones to make movement easy
Muscles work in antagonist pairs: This means that one needs to contract and the other needs to relax to move bones at a joint			
			

1. Key words

Transparent	A material that allows all light to pass through it
Translucent	A material that allows some light to pass through it.
Opaque	A material that allows no light to pass through it.

2. Reflection

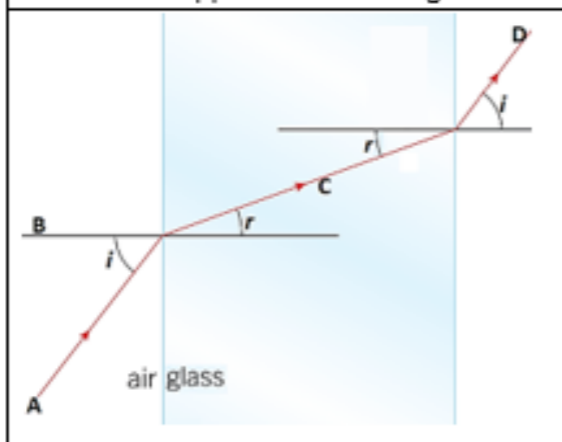
Law of reflection - Light is reflected at equal angles: the angle of incidence is equal to the angle of reflection



A	Incident ray
B	Normal line (90° to mirror)
C	Reflected ray
D	Mirror
<i>i</i>	Angle of incidence
<i>r</i>	Angle of reflection

3. Refraction

Refraction happens whenever light travels from one medium to another.

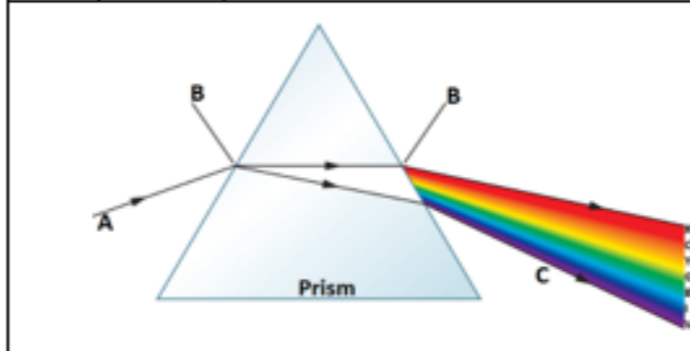


A	Ray entering
B	Normal line (90° to glass)
C	Refracted ray
D	Ray emerging
<i>i</i>	Angle of incidence
<i>r</i>	Angle of reflection

4. Dispersion

Dispersion - The splitting up of a ray of light of mixed wavelengths by refraction into its components.

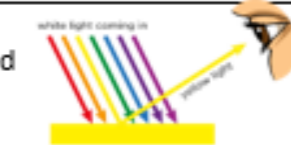

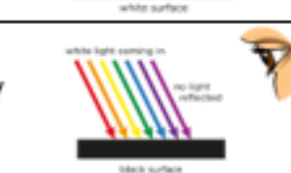
A	White Light
B	Refraction
C	Visible Spectrum



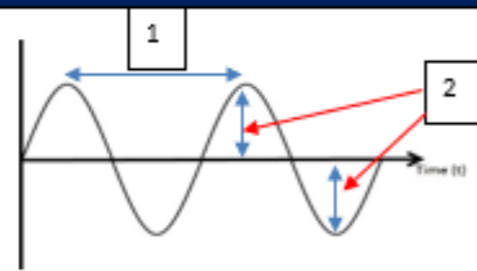
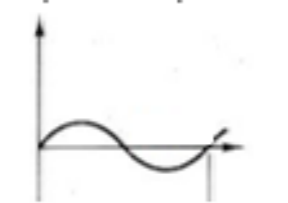

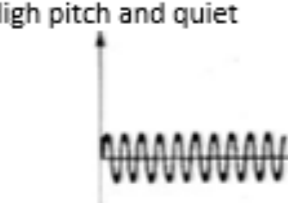

Spectrum:
Red
Orange
Yellow
Green
Blue
Indigo
Violet

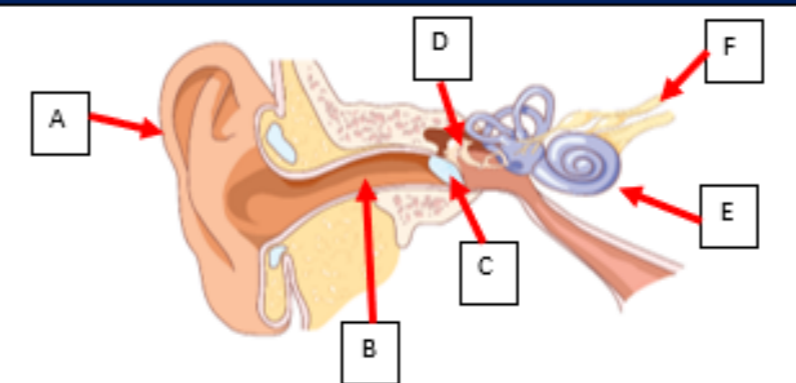
5. Filters and seeing colours

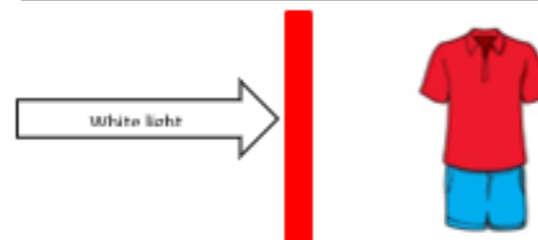
A filter is a material that absorbs some or all of the spectrum of light as white light is passed through it.

Seeing a coloured object	Yellow is reflected, but all other colours are absorbed by the material	
Seeing a white object	All the colours of the spectrum are reflected by white objects	
Seeing a black object	All the colours of the spectrum are absorbed by black objects	

6. Key words	
Vacuum	A space with no particles of matter in it.
Amplitude	Height of a wave
Frequency	The number of waves passing a fixed point in one second
Wavelength	Length of one full wave
Decibel	Unit used to measure sound intensity or loudness (dB).
Hertz	Units used to measure frequency

7. Waves	
	
1	Wavelength
2	Amplitude
Relationships	
High frequency = high pitch	Large amplitude = louder sound
Low pitch and quiet	Low pitch and loud
	
High pitch and quiet	High pitch and loud
	

8. The ear		
		
A	Outer Ear	Funnels vibrations into the ear canal
B	Ear canal	The passage in the ear from the outer ear to the ear drum.
C	Eardrum	A membrane that transmits sound vibrations from the outer ear to the middle ear.
D	Ear bones	Vibrates are amplified through the bone
E	Cochlea	Snail-shaped tube in the inner ear with the sensory cells that detect sound
F	Auditory nerve	Transmits an electrical impulse to the brain



Challenge Questions	
1	How does sound travel to the ear?
2	Explain the following observations: <i>'We cannot hear sound in space'</i> <i>'You see the flash of lightening before you hear the sound of thunder'</i>
3	What colour will the t-shirt and shorts appear in the diagram above. Justify your answer
4	Explain how soundproofing works