

Y7 Science Checklist (term 3)



Waves (Physics)	☺	☹	☹
https://classroom.thenational.academy/units/light-and-space-fa61			
When a light ray meets a different medium, some of it is absorbed and some reflected. For a mirror, the angle of incidence equals the angle of reflection. The ray model can describe the formation of an image in a mirror and how objects appear different colours.			
When light enters a denser medium it bends towards the normal; when it enters a less dense medium it bends away from the normal. Refraction through lenses and prisms can be described using a ray diagram as a model.			
Construct ray diagrams to show how light reflects off mirrors, forms images, and refracts.			
Light travels at 300 million metres per second in a vacuum.			
Different colours of light have different frequencies.			
Use ray diagrams of eclipses to describe what is seen by observers in different places.			
Explain observations where coloured lights are mixed or objects are viewed in different lights.			
Use ray diagrams to describe how light passes through lenses and transparent materials.			
Describe how lenses may be used to correct vision.			
Use a ray diagram to predict how an image will change in different situations.			
Predict whether light will reflect, refract or scatter when it hits the surface of a given material.			
Use ray diagrams to explain how a device with multiple mirrors works.			
KEYWORDS	☺	☹	☹
Incident ray: The incoming ray.			
Reflected ray: The outgoing ray.			
Normal line: From which angles are measured, at right angles to the surface.			
Angle of reflection: Between the normal and reflected ray.			
Angle of incidence: Between the normal and incident ray.			
Refraction: Change in the direction of light going from one material into another.			
Absorption: When energy is transferred from light to a material.			
Scattering: When light bounces off an object in all directions.			
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.			
Convex lens: A lens that is thicker in the middle which bends light rays towards each other.			
Concave lens: A lens that is thinner in the middle which spreads out light rays.			
Retina: Layer at the back of the eye with light detecting cells and where image is formed.			

Earth (Chemistry)

<https://classroom.thenational.academy/units/materials-and-the-earth-78e8>



Sedimentary, igneous and metamorphic rocks can be interconverted over millions of years through weathering and erosion, heat and pressure, and melting and cooling.

The three rock layers inside Earth are the crust, the mantle, and the core.

Explain why a rock has a particular property based on how it was formed.

Identify the causes of weathering and erosion and describe how they occur.

Construct a labelled diagram to identify the processes of the rock cycle.

Identify circumstances that indicate fast processes of change on Earth and those that indicate slower processes.

Predict planetary conditions from descriptions of rocks on other planets

Describe similarities and differences between the rock cycle and everyday physical and chemical processes.

The solar system can be modelled as planets rotating on tilted axes while orbiting the Sun, moons orbiting planets, and sunlight spreading out and being reflected. This explains day and year length, seasons and the visibility of objects from Earth.

Our solar system is a tiny part of a galaxy, one of many billions in the Universe. Light takes minutes to reach Earth from the Sun, four years from our nearest star and billions of years from other galaxies.

Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun.

Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year.

Describe how space exploration and observations of stars are affected by the scale of the universe.

Explain the choice of particular units for measuring distance.

Predict patterns in day length, the Sun's intensity or an object's shadow at different latitudes.

Make deductions from observation data of planets, stars and galaxies.

Compare explanations from different periods in history about the motion of objects and structure of the Universe

KEYWORDS



Rock cycle: Sequence of processes where rocks change from one type to another.

Weathering: The wearing down of rock by physical, chemical or biological processes.

Erosion: Weathering of rock and its movement by water, ice or wind (transportation).

Minerals: Chemicals that rocks are made from.

Sedimentary rocks: Formed from layers of sediment, and which can contain fossils. Examples are limestone, chalk and sandstone.

Igneous rocks: Formed from cooled magma, with minerals arranged in crystals. Examples are granite, basalt and obsidian.

Strata: Layers of sedimentary rock.

Metamorphic rocks: Formed from existing rocks exposed to heat and pressure over a long time. Examples are marble, slate and schist.

Galaxy: Collection of stars held together by gravity. Our galaxy is called the Milky Way.

Light year: Distance light travels in a year (over 9 million, million kilometres).

Stars: Bodies which give out light, and which may have a solar system of planets.

Orbit: Path taken by a satellite, planet or star moving around a larger body. Earth completes one orbit of the Sun every year.			
Exoplanet: Planet that orbits a star outside our solar system.			

*** Pupils will be reviewing topics covered from Sept and completing project based work to develop scientific practical skills.