

DNPS SCIENCE CURRICULUM

Cross Stage Unit: Stages 1/2

Knowledge & Understanding: PHYSICAL PHENOMENA

UNIT: BRIGHT LIGHT –OUTA SIGHT

Class: _____

Term: 1 2 3 4 (circle)

Weeks: _____

Learning Process Outcomes

Investigating Strand

- Conducts investigation by observing, questioning, predicting, testing, collecting, recording and analysing data, and drawing conclusions.

Designing and Making Strand

- Stage 1**-Develops and implements own design ideas in response to an investigation of needs and wants.
- Stage 2**-Develops , implements and evaluates ideas using drawings, models and prototypes at appropriate stages of the design process.

Using Technology Strand

- Selects and uses a range of equipment, computer-based technology, materials and other resources to undertake an investigation or design task.

Values and Attitudes

- VA1 Demonstrates confidence in their own ability and a willingness to make and implement decisions when investigating, designing, making and using technology.
- VA2 Exhibits curiosity and responsiveness to scientific and technological ideas and evidence.
- VA3 Initiates scientific and technological tasks and challenges and perseveres with them to their completion.
- VA4 Gains satisfaction from their efforts to investigate, to design, to make, and to use technology.
- VA5 Works cooperatively with others in groups on scientific and technological tasks and challenges.
- VA6 Shows informed commitment to improving the quality of society and the environment through science and technology activities.
- VA7 Appreciates contributions made by individuals, groups, cultures and communities to scientific and technological understanding.
- VA8 Appreciates the significance of Australian scientific and technological expertise across gender and cultural groups.

DNPS Stage 1/2 UNIT:-” BRIGHT LIGHT –OUTA SIGHT”

Teaching Program

Teaching and Learning Activities

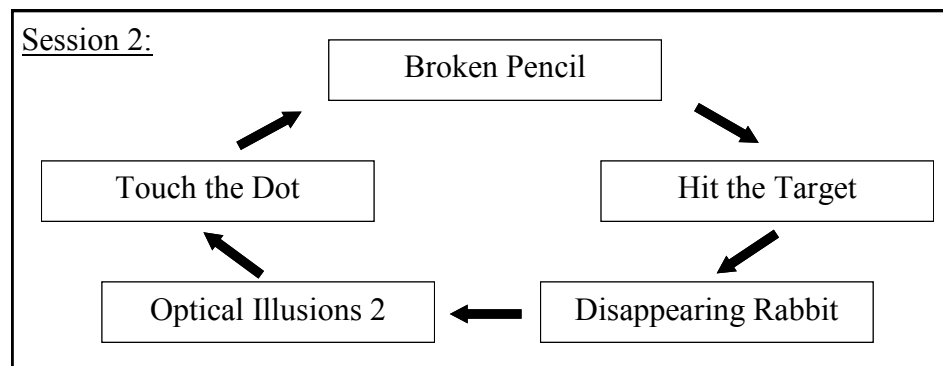
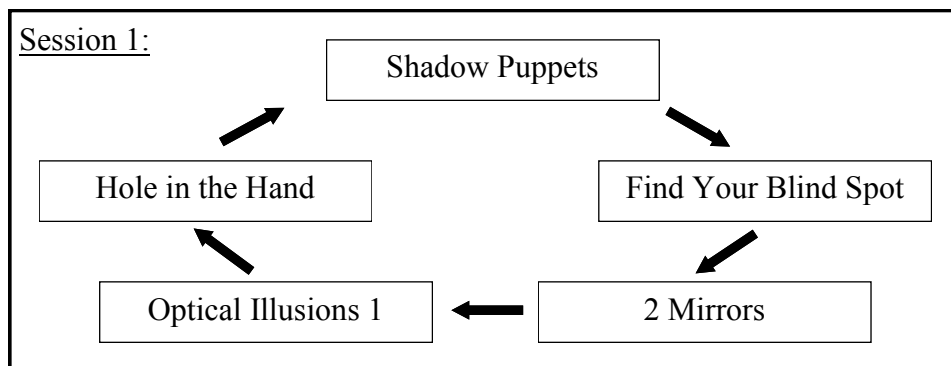
Stage 1/2

Task 1 Stimulus: Students view movie slide show, ‘Bright Light-Outa Sight’ and then write down ‘Sources of Light’, observed and not observed in video.

Teacher and students collate all sources of light known eg. fire, candles, lamps, globes, sun, traffic lights, lightning. Students select 10 from brainstormed list to be listed on ‘Title Page worksheet’ and Title page to be coloured and stuck in Science book.

Task 2

Students engage in 2 x Light related discovery learning sessions, rotating around activities, as described below (refer attached explanatory sheets):



EVALUATION:

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Task 3

Teacher revises the following activities and draws student attention to the concepts listed:

- Shadow Puppets -light cannot pass through your hands. Your hands are opaque.
- Hit the Target-light travels in a straight line
- Find Your Blind Spot/ Disappearing Rabbit-everyone has a blind spot where things can't be seen
- Hole in the Hand-your 2 eyes work together
- Broken Pencil- when light bends, this is called refraction
- Optical Illusions-your brain interprets (tries to make sense of) things you see
- 2 Mirrors- light is reflected (bounces off) from objects

Teacher briefly explains the concepts of : transparent (see through), translucent (light passes through, but not transparent) and opaque (can't see through) using a torch and objects eg. cellophane, glass, exercise book. These key words and definitions written in Science books. Students then test 10-15 items using torches, and list items tested under each of these headings.

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Task 4

Exploring rainbows and bubbles.

Students half fill a dish with water, place a mirror at an angle half in water, and hold sheet of white paper at other end of dish. Torch-light shone onto submerged mirror and mirror adjusted to show a rainbow on paper. Students complete accompanying worksheet, ‘Rainbows and Ripples’

Students attempt similar expt. with glass of water on window sill.

Where else do you see rainbows?-eg oil slicks, in sky, bubbles

Teacher describes rainbow formation in scientific terms- Rainbows are seen when raindrops, falling in the distance, bend (refract) and bounce (reflect) sunlight back towards your eye. The light splits into the colours of the spectrum.

Just for Fun: Students make hoops out of wire and use these as bubble blowers (need wire, detergent, water, container, straws, string)

Students attempt to create: the hemisphere, caterpillar, fission, fusion, little bubble in bigger bubble.

Students make bubble frames and attempt: hand through bubble window, super bubble, double trouble

(see attached sheets for instructions)

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Task 5

Looking at lenses and the eye!

In pairs students take it in turns to shine a torch into an eye and observe how the eye reacts.

Teacher shows a labelled diagram of the eye (and/or dissects a bullock’s eye) and explains and defines the following:

- Iris– the muscle that opens and shuts the pupil
- Pupil-the hole that lets through the light
- Lens– bends the light onto the retina
- Optic nerve– takes messages from the eye to the brain
- Retina– the back of the eye where the image forms
- Vitreous humor-the jelly liquid in the eye

Students complete associated worksheet, ‘The Parts of the Eye’

The inside of a camera may also be related to the above parts! Concave and convex lenses in glasses also!

Students complete mini-project about ‘Lenses, Lamps and Mirages’ (see attached sheets)

This mini-project is to be assessed.

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Task 6

In groups of 3, students create a slide show using 'Pinnacle Studio' from 10-12 photographs taken around the school on a sunny day that show 'light and shade'. They may take photos through translucent and transparent objects. The slide show is to be called, 'Light and Shade', and is to include a title, transitions and music.

Groups show slide show to the class and are assessed on this.

EVALUATION: