

FIRST AND SECOND CLASSES – FORCES

Teacher Guidelines:

- Pp. 107-116
- Exemplar 2: A unit of work based on forces p38
- Exemplar 31 p109

Linkages:

- Living Things - Myself
- Materials - Properties and characteristics of materials

Integration:

- Language Development – English and Gaeilge
- Geography – Transport, water, weather and wind
- History – Transport
- Maths – measurement/sorting
- Visual arts
- SPHE
- PE

FIRST AND SECOND CLASSES – FORCES

Content Objective:

- **EXPLORE HOW OBJECTS MAY BE MOVED BY PUSHING AND PULLING.**

Some suggested activities:

- Sort into sets a variety of toys and everyday objects into groups, which ones require a push or a pull to make it move?
- How do household objects/tools work (egg whisk, paper punch, hinges etc)
- What other types of pushing and pulling are there? (Squeezing, stretching etc.)
- Are there other ways of making the objects move? e.g. blowing, using a slope etc
- Can you make the toys go faster or slow down? Slopes and inclined surfaces.
- Can you think of different ways of stopping the toy?
- Which toys/objects need a big push/pull to move them using an elastic band?
- Which toys/objects need a small push/pull to move them using an elastic band?

Some suggested Investigations:

- Can toys with wheels travel quickly, a long distance? Different wheels?

- How can we move a heavy box of toys? Rollers, wheels, cylindrical objects

Some suggested designing and making:

- A variety of wheel based vehicles to carry a set load e.g. a small book

FIRST AND SECOND CLASSES – FORCES

Content Objective:

- **BECOME AWARE OF AND EXPLORE HOW MOVING WATER AND MOVING AIR CAN MAKE THINGS MOVE.**

Design and make a land yacht or a vehicle that can be used for carrying toys for a set distance.

Some suggested activities:

- What objects use air to make them move? Where do we see/feel moving air? (e.g. windmill, Vacuum Cleaner, sailing boats, kites, windsurfers, hairdryer, fan in car etc.) Using a hairdryer, what different types/size balls (table tennis, tennis, rubber, small football etc) can I move? What changes can I make?
- What objects use water to make them move? How does water help us move things? (e.g. boats, ships, paddle boats, canals, water wheels in mill, garden hose sprayer), Using a garden hose, what different size of ball can I move? What changes can I make? (Pinch nozzle, increased pressure)

Some suggested investigations:

- How many blocks can my land yacht carry?
- How far will my land yacht travel? (see next content objective)
- Investigating the small and large card windmills – where does it move faster...indoors/ outdoors, which side of school?

Some suggested designing and making:

- A land yacht: exemplar 45 Teacher Guidelines P136
- A windmill made out of card– moving air – large ones and smaller ones

FIRST AND SECOND CLASSES – FORCES

Content Objective:

- **OBSERVE AND INVESTIGATE THE MOVEMENT OF OBJECTS SUCH AS TOYS ON VARIOUS MATERIALS AND SURFACES.**

Level and inclined surfaces

Rough and smooth surfaces

Some suggested activities:

- See below
- See exemplar 32 Page 112 → 113 - Wheels

Some suggested investigations: Ramp investigation

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| <ul style="list-style-type: none"> • Does height/incline make a difference? • Does run off surfaces make a difference? • Different weight in land yacht • Does wheel size make a difference? • Does sail size make a difference? | <ul style="list-style-type: none"> • Investigate the force needed to pull a block of wood on various surfaces? • Measure the force needed with elastic band • How might I reduce the force/friction? |
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Some suggested designing and making:

- Design and make a vehicle to carry a set load e.g. small bag of pebbles to use in the previous investigation

FIRST AND SECOND CLASSES – FORCES

Content Objective:

- **INVESTIGATE HOW FORCES ACT ON OBJECTS**

Investigate floating and sinking with a wide range of materials and objects

Make and test predictions about objects that will sink or float

Group objects that will sink or float

Investigate how some objects may be made to float by hollowing them out

Some suggested activities:

- Sort a variety of objects into groups: those that float and those that sink.
- Do all heavy things sink?

- Do all light things float?
- How can you make something sink?
- What forces do we use when we play in the school yard, the public park play ground? (see-saw, swing, slide etc)

Some suggested investigations:

- Investigate which items float and sink, investigate the different shapes that will sink and float.
- Make a plasticine boat. How many peas, pebbles or marbles can my boat carry? What factors influence the carrying capacity of my boat?
- How will I make a bridge e.g. using 10 playing cards, masking tape and a book – can I use less cards, can I support more than one book?

Some suggested designing and making:

- Different boats and floating vehicles to carry a set load e.g. bag of pebbles
- Design a bridge from playing cards that will support a large text book