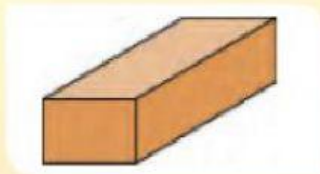


Summary

- In this term you revised syringe mechanics using two equal sized syringes linked by a tube. You observed force transfer between the syringes filled with compressed air and water – a pneumatic and a hydraulic system.
- You carried out action research and experimented with two different sized syringes; and you learned about Pascal's Principle.
- You investigated a hydraulic press and a hydraulic jack and evaluated the design. You also drew a systems diagram which described the way a hydraulic jack works.
- You continued with further investigations into pulleys, and mechanical control systems (ratchet and pawl, disc brake, bicycle brake and cleat).
- You revised spur gears and learned about bevel gears, rack-and-pinion gears and worm gears.
- You examined various items using mechanisms found in the modern kitchen and/or home, workshop/garage and drew single vanishing point perspectives.
- In the Mini-PAT you designed a mechanical, electrical, hydraulic or pneumatic solution to a problem. You designed a brief, drew a plan, made a prototype and presented your solution.

Questions

- 16 What other gear system is used to move a steel gate at a slow speed?
- 17 Name five constraints you had to keep in mind when you wrote your design brief.
- 18 What is meant by a pneumatic system?
- 19 Name the three views we have to do in first angle projection drawings.
- 20 Are first angle orthographic projection drawings 2D or 3D drawings?
- 21 Describe how to work with the following tools:
 - 21.1 pliers
 - 21.2 ruler to measure
 - 21.3 cutting knife
 - 21.4 a punch.
- 22 Why is good outlay planning on your material choices so important?
- 23 Why will a lack of making skills spoil your project?
- 24 Explain the following movements and give an example of each:
 - 24.1 continuous movement in a straight line
 - 24.2 rotary movement
 - 24.3 oscillating movement
 - 24.4 reciprocating movement.
- 25 Explain how a mechanism can increase the speed of a bicycle?
- 26 Select three items to be found in a modern kitchen. Write a report on one of the items. Include the following in your report:
 - Who is it for?
 - What is it for?
 - Will it do the job?
 - What material is it made of?
 - Is the material suitable?
 - What should it cost?
 - Does it look good?
 - Is it safe to use?
- 27 Use single vanishing point perspective to draw the following object.
Enhance the drawing by showing the texture of the wood grain, and shadows.



Answers

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