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.

LIVEWORKSHEETS

Questions

6 Make a free-hand sketch of a single wheel fixed pulley. Show the following on the drawing:
- the pulley
- the load
- the lifting force (effort)

7 Single fixed pulley: Why will the weight (load) drop downwards if you release your effort (force) on the string?

8 What gear system will allow a ratchet screwdriver to turn to one side at a time?

9 To which category will a disc brake belong – electrical system, mechanical system or a pneumatic system?

10 What system is used to enable bicycle brakes to be adjusted?

11 Will pressure play an important role in the braking systems of vehicles and bicycles?

12 The purpose of the idler gear is to s_____e or to cause to operate with exact coincidence in time or rate.

13 What is the name of the gear system shown below?



14 Does the gear system below make use of bevel gears?



15 What type of mechanical system is used to move a heavy steel gate at a slow speed?

LIVEWORKSHEETS

Answers

6.

7.

8.

9.

10.

11.

12.

LIVEWORKSHEETS

13.

14.

15.

LIVEWORKSHEETS