

PUPIL SHEETS

ACTIVITY 1

The TRIANGLE - a fundamental basic of K'nex designs

- Make the triangle pictured below.
- The triangle can be made using different rods and connectors as long as there are 2 rods of the same length meeting at a right angle.



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ACTIVITY 2

Create your own initials

- Use different k'nex pieces to make the initials of your name.
- Think of different combinations of k'nex you can use for each letter to create some interesting designs.
- Think about how you use the connectors to make the best shapes.



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ACTIVITY 3
Construct a cube

- In teams of 2 or more, build the cube pictured below.
- Try and build a different sized cube than your neighbours e.g. use yellow rods instead of red ones.



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**ACTIVITY 4
Build a Bridge**

- In teams of 2 or more, build the bridge pictured below.
- Test the strength of the bridge by balancing a load on it, such as a book.



- This bridge is not very well designed, making it quite unstable.
- Create ways to improve the design by adding to the original bridge.

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**ACTIVITY 5a
Pulleys – Simple Machines**

- In teams of 2 or more, build a structure with one pulley. You can either copy the frame shown below or design one of your own.
- Make sure the pulley can lift a small load e.g. ball in K'nex kit.



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**ACTIVITY 5b
Pulleys – Block and Tackle**

- In teams of 2 or more, build a structure using 2 or more pulleys. You can either copy the frame pictured below, or design your own.
- Design a handle that will be used to operate the pulley systems. You may have to change the frame to allow a handle to be added.

