

Building challenges

Fun, hands-on activities which enable children to practice their teamwork, cooperation and communication skills. These activities could be planned inside the classroom but are designed for being built in the playground using simple, low-cost resources.

Egg drop

Resources: 1 egg per group, range of materials, e.g. straws, egg boxes, newspaper, bubble wrap, cardboard, masking tape

Put children into small groups and give each group equal numbers of materials that they can use. Give each group a set amount of time to work out how to protect an egg that will be dropped from a height. Give them time to discuss and plan how they are going to build it.

Give each group the egg to add to their contraption (you must be able to see part of the egg after each drop). Begin by dropping each one from 1m high - has it been protected? You could then move onto larger heights.



Building a signal tower

Resources: bamboo canes, string, masking tape, bamboo connectors

The team are lost in a bamboo forest; the only way to survive is to catch the attention of the people in the local village. To get their attention, the teams must either build the tallest free-standing structure, or a signal tower that is a specified height, e.g. 6m.

Each group are given the same number of resources.

Water timer

Resources: plastic cups, measuring jugs, masking tape, gaffer tape, straws, buckets, tubing, drain pipes, stopwatches

Can children work in small groups to design a water timer that measures a specified amount of time, e.g. 10 seconds? They would need to work by trial and error.

Test the timers to see which one is the most accurate.



Mini-shelters

Resources: natural materials, e.g. twigs, stones, leaves, clay, compost, sand, seeds. And/or craft materials, e.g. lollipop sticks, straws, cardboard, paper, pipe cleaners. You will need small toys (animals or people) and possibly a tray or cardboard box to build it in.

Give children a scenario, e.g.

1. a plane has crashed in the middle of a forest and they need to build a shelter for the survivors.
2. a hibernating animal needs somewhere to overwinter which will be warm and dry- make it somewhere that it will feel safe, warm and dry.

Each group needs to build a model of their shelter. What properties does the shelter need? They might think about the size, weather, other animals, food availability/water, etc.

Encourage them to design a plan to consider the materials used, the shape and how it will meet the brief. If children are collecting natural materials from the school grounds, remind them that they cannot pick leaves/branches of living plants.

Give each group a set time to build their shelters, e.g. 30 minutes.

Let each group present their shelter to the class, giving reasons why their shelter meets the brief. The rest of the class could evaluate the shelter, e.g. two stars and a wish.



Shelters

Resources: sticks (ideally with holes drilled into the tops), bamboo canes, twine, tarpaulin, waterproof sheets, rubber connectors (from gardening shops), buckets with concrete and a long stick in it.

Give groups planning time to design their shelter - where would it go? What materials would they use? What shapes are best for the shelter? What properties does their shelter need to have? They could research different shelters that are used by people around the world.

They could write a set of rules for how they will construct their shelters safely. Give a set time for groups to build their shelter, leaving time for children to add final touches.

Shelters can then be judged according to certain criteria, e.g. aesthetics, robustness and waterproofing.

