

# Sfida STEM

Category 1 : Year 1 & 2

## Delivering cookies for Santa



**S**cience **T**echnology **E**ngineering **M**athematics

simple machines · forces · distance



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## Instructions:

- Design and build a device which must be able to pull 4 cookies along a surface.
- The 4 cookies must fit comfortably on this device.

## Suggested materials:

(Other materials may be used)

- Rubber bands
- Tubes/ toilet paper rolls
- String
- Soft drink caps
- Kebab sticks/ tooth picks
- Used cereal box



## Top tips:

- Measure the distance travelled by using your hands (how many hands is it long?).



- Make sure your structure is strong enough to transport the cookies!
- Conduct research and gather ideas!



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# Sfida STEM

Category 2 : Year 3 & 4

## Santa's Sleigh Landing Pad



**Science** **T**echnology **E**ngineering **M**athematics

simple structure · forces · mass · distance



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## Instructions:

- Build an elevated landing pad for Santa's sleigh that should cushion the impact for the sleigh to land safely.
- The landing pad must be sturdy enough and remain intact when the sleigh (represented by a 500ml bottle of water) is dropped from a height of 1 metre.
- The small bottle of water should be full of water.

## Suggested materials:

(Other materials may be used)

- Plastic cups
- Tape
- Index cards / used cereal box
- Used paper
- Straws
- Marshmallows

## Top tips:

- Do some research to gather ideas and a possible design!
- Make sure that your structure is strong & comfortable enough for Santa's sleigh to land on it!



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# Sfida STEM

Category 3 : Year 5 & 6

## Christmas Shelter



**S**cience **T**echnology **E**ngineering **M**athematics

simple structure · forces · shapes



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## Instructions:

- Build a free-standing shelter.
- You must be able to fit in it.
- Use newspaper (or any other used paper) and tape only.
- Decorate the shelter for Christmas.

## Suggested materials:

(Other materials may be used)

- Newspapers/ magazines/ used paper/ junk mail
- Tape
- Christmas decorations



## Top tips:

- Do some background research on designing structures.
- Which shapes will make the structure stronger? Squares, rectangles, triangles or circles?
- How will you join the different parts of the structure?
- How can you make your structure better?



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