

LEGO TOWER CHALLENGE

Teacher Project Pack

Overview

The LEGO Tower Challenge is an interactive team-building and engineering activity designed to develop communication, planning, problem-solving and budgeting skills. Participants take on different workplace roles and work together to design and build the tallest and strongest freestanding LEGO tower while maximising profit.

Learning Outcomes

Participants will:

- Develop teamwork and collaboration skills
- Experience the importance of planning before construction
- Learn about budgeting and resource management
- Apply engineering and design thinking
- Practice communication and decision-making
- Develop problem-solving skills under time pressure
- Use measurement and basic financial calculations

Curriculum Links

This activity supports:

- Teamwork and communication
 - Engineering principles
 - Project planning
 - Budget management
 - Measurement and mathematics
 - Problem solving
 - Employability and workplace skills
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Challenge Brief

You are part of a construction team working on a tower-building project.

Your objective is to build the tallest and strongest freestanding LEGO tower possible while making the highest profit.

The tower must:

- Be freestanding
- Be at least 300mm (30cm) tall
- Hold a chosen weight for 45 seconds
- Be completed within the time allowed

The team with the highest profit wins.

Team Roles

Each team should consist of six participants:

3	Builders	Construct the tower during the build phase Only builders may touch the LEGO during construction
1	Planner	Leads discussions during the planning stage Helps develop the tower design and strategy
1	Timekeeper	Monitors the challenge timings Keeps the team on schedule
1	Money Manager	Manages the budget Calculates profit and expenditure Advises on purchasing decisions

Challenge Schedule

Stage 1: Planning (15 Minutes)

Teams must:

- Assign team roles
- Discuss and agree on a tower design
- Decide how many bags of LEGO to purchase
- Consider which fruit they will attempt to support
- Set a target tower height

No building is allowed during this stage.

Stage 2: Building (20 Minutes)

Teams construct their tower.

Rules:

- Only designated Builders may handle the LEGO
 - Teams must work within their purchased materials
 - The testing weight must be selected before time expires
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Stage 3: Testing (10 Minutes)

The chosen weight will be placed on top of the tower.

To pass:

- The tower must remain standing
 - The weight must remain supported
 - The structure must stay standing for 45 seconds without assistance
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Materials and Costs

Each team may purchase up to 8 bags of LEGO.

Cost of Materials

Item	Cost
LEGO Bag	£10,000

Maximum of 8 bags per team.

Weight Options

Teams may choose ONE weight.

Weight	Reward
Lemon	£100,000
Apple	£300,000
Pineapple	£750,000

Heavier weights offer higher rewards but increase the likelihood of failure.

Height Rewards

Tower Height	Reward
300mm or smaller	£100,000
300mm to 600mm	£200,000
Over 600mm	£300,000

Scoring

Teams earn money from:

- Tower height and Weight successfully supported

Profit Formula - Profit = Money Earned – Costs

Important: If the tower falls: Teams may still receive earnings based on the remaining height. No weight bonus will be awarded.

Equipment Checklist

For approximately 30 participants (5 teams of 6):

LEGO

- 10 x bags of LEGO

Team Resource Packs

Prepare one pack per team containing:

- Ruler
- Pencil
- Notebook
- LEGO Challenge Instructions
- Costs & Earnings Sheet

Challenge Resources

- Lemon
- Apple
- Pineapple

Additional Equipment

- High-visibility vests (approximately 20)
- Timer or stopwatch
- Measuring tape/ruler

Printed Materials

- LEGO Challenge Instructions (1 per team)
 - Costs & Earnings Sheets (1 per team)
 - Teacher Scoring Sheet
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Teacher Scoring Sheet

Team	Bags Purchased	Cost	Height Reward	Weight Reward	Total Earnings	Profit
Team 1						
Team 2						
Team 3						
Team 4						
Team 5						

Debrief Questions

Following the challenge, ask teams:

1. What worked well during planning?
 2. How did your team make decisions?
 3. Did you take any risks? Were they worth it?
 4. How did budgeting influence your decisions?
 5. What would you do differently next time?
 6. How does this activity reflect real construction projects?
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