

LET'S NEGOTIATE

Description of activity

This activity helps students to understand how engineers and designers balance different specification details when developing new products.

Preparation for Let's Negotiate activity

Each group of four students will need a copied sheet from overleaf that has been cut into the specification criteria and a sheet of flipchart paper.

The activity

Organise the class into groups of four students. Ask one student per group to draw the 'Let's Negotiate board' on flip chart paper, as shown below.

Explain to the students that they are to assume they are a team of engineers working for a mechanical toy company.

The aim of the Let's Negotiate activity is for the team to prioritise which of the specification details (on the cards) will be high, medium or low priority.

Ask one student per group to deal out the all of the statement cards equally amongst the group.

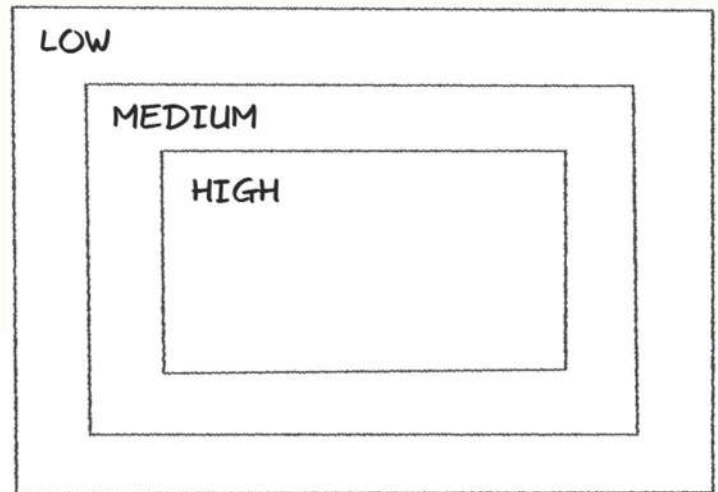
They then take it in turns to put one of their cards on the board in high, medium or low sections, read out the criterion and explain why they want it put there. Continue doing so but if the high section has six cards in it and someone wants to put another card in there, then he/she must persuade the group that the new criteria replaces one already in there. Continue until all cards are placed in agreed sections. Then look at the decisions and decide if there are any other criteria that are more important that are missing.

Ask each group to feedback and justify its top priority specification choices.

Ask students to reflect on how many sustainability criteria are in the top, medium or low priority boxes.

Ask students to discuss how their company's criteria for a new toy might differ if they had a strong environmental or values based policy.

Let's negotiate board



Learning objectives

1. To enable students to understand that any engineering process involves balancing the demands of different criteria including sustainability.
2. To help students to identify criteria for a product and write their own specifications.

Learning outcomes

1. Students will understand that sustainability is a key element of any modern engineering solution.
2. Students will understand and be able to explain why they have chosen to include particular criteria in their specification, including sustainability criteria.

PLTS

Reflective learners – students discuss and justify choices they would make about the criteria they think ought to have a high priority in an engineering product.

Team workers – students work together to produce an agreed set of priorities for an engineered product.

SPECIFICATION CRITERIA

You can develop your own specification criteria depending on the task but we have used the generic criteria below for a number of different engineered products e.g. a children's mechanical toy, a prosthetic limb or a power screw driver.

| | | |
|--|---|--|
| Capable of being used by disabled children | Durable | Must be designed for ease of disassembly |
| Minimises energy use in production | Capable of being repaired | Must apply to all relevant quality control techniques |
| Fit for purpose | Workers have fair pay and equal rights | Made from local materials |
| Can be made at a profit | Produced in good working conditions | Easy to use |
| Capable of being used by disabled components capable of reuse or recycling at end of life | Minimises energy use in normal use | Capable of being made in a school workshop |
| Should minimise any chemical emissions | Reduces packaging to a minimum | Safe for all children to use |
| Must not produce any hazardous waste | Meets a genuine need | Uses smart materials or processes as appropriate |
| Doesn't use any batteries | Attractive to all children | Reuses components where practicable in manufacture |
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