

THE QUALITY OF INEQUALITY

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Time: 60-90 minutes +

Content Connections:

- Social Studies (History)
- Engineering
- Economics

Overview:

Inequality happens regardless of the intelligence, skills, or any other factor of the group it falls upon - it is situational. This building challenge will demonstrate how inequality continues to stack upon itself and how the inequality gap can continue to widen.

*“Inequality: the quality of being unequal or uneven,
such as social disparity,
disparity of distribution of opportunity;
lack of evenness.”*

Merriam-Webster.com

Objective:

Build the tallest tower possible that can stand on its own. Towers that reach the minimum required height in the time limit set for each round will earn additional supplies. If a group does not meet the minimum requirements of the challenge at each round, it does not receive additional supplies. Students in that group will continue to build as best as they can with the supplies they already have.

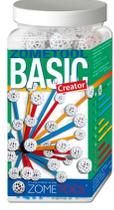
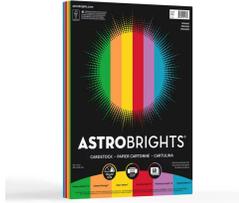
Build Challenge #1 will use supplies intended to be easier and/or of better quality for construction, and Build Challenge #2 will use supplies intended to be more difficult and/or of lower quality for construction.

Materials:

The following materials are suggestions. The purpose is to pair the material used in Build Challenge #1 with a more-difficult building material in Build Challenge #2 (see Objective). Each material simply needs to have a harder-to-work-with counterpart. Additional examples are provided in parentheses, but please use what materials students have access to.

SUGGESTED MATERIALS

Build Challenge #1 intentionally provides better-quality build materials than Build Challenge #2

<p style="text-align: center;">EASY</p> 	<p style="text-align: center;">MEDIUM</p> 	<p style="text-align: center;">HARD</p> 	<p style="text-align: center;">EXTREME</p> 
<ul style="list-style-type: none"> ★ Measuring tape <p>Build Challenge #1 - BETTER QUALITY</p> <ul style="list-style-type: none"> ★ Straw connectors (or Kapla blocks, Jenga Blocks, or Wooden Building Blocks) <p>Build Challenge #2 - LOWER QUALITY</p> <ul style="list-style-type: none"> ★ Raw spaghetti ★ Marshmallows 	<ul style="list-style-type: none"> ★ Measuring tape <p>Build Challenge #1 - BETTER QUALITY</p> <ul style="list-style-type: none"> ★ Zome tools (or Tinker Toys, Playstix, or Tengu Toys) <p>Build Challenge #2 - LOWER QUALITY</p> <ul style="list-style-type: none"> ★ Toothpicks ★ Marshmallows ★ Measuring tape 	<ul style="list-style-type: none"> ★ Measuring tape <p>Build Challenge #1 - BETTER QUALITY</p> <ul style="list-style-type: none"> ★ Brainflakes (or Magnetic Tiles or Playing Cards) <p>Build Challenge #2 - LOWER QUALITY</p> <ul style="list-style-type: none"> ★ Pretzel snaps (waffle shaped) ★ Playdough ★ Measuring tape 	<ul style="list-style-type: none"> ★ Measuring tape ★ Scissors <p>Build Challenge #1 - BETTER QUALITY</p> <ul style="list-style-type: none"> ★ Cardstock (or cardboard) ★ Tape <p>Build Challenge #2 - LOWER QUALITY</p> <ul style="list-style-type: none"> ★ Notebook Paper

DIRECTIONS

Part One: Tower Construction

- Divide your class into groups (2-4 students per group) and give each group an equal amount of supplies. Whatever that amount of supplies is (for example: 10 pieces of spaghetti per group), set aside additional sets of supplies to be awarded to groups who meet the requirements (checkpoint) at the end of that round.
- The students will complete the Build Challenge #1 where they will have three rounds to earn additional supplies and build the tallest tower.

BUILD CHALLENGE #1

For Round One, students will attempt to build the tallest tower possible (8-12” depending on materials) in a limited timeframe (~6-10 minutes).

- *Note: select a height and time that ensures some groups will NOT meet the height requirements (checkpoint) at the end of the round.*

At the end of Round One, any group that has reached the height requirement (checkpoint) will receive additional materials. If a group has not reached that minimum requirement, they will not receive additional materials.

For Round Two, all groups will participate. However, some groups will have the same amount of materials as before, while groups that successfully completed Round One will have more building materials. Repeat the building challenge, with a limited time (6-10 minutes) to reach a new, higher height requirement (checkpoint) (16-24”).

At the end of Round Two, if the new height requirement (checkpoint) is achieved, the group receives additional supplies, and those who have not achieved the checkpoint will receive no additional supplies.

Continue for a third round, allowing limited time (~6-10 minutes) to complete the highest checkpoint (36”).

At the end of Round Three, have students measure their tower and record their final height.

BUILD CHALLENGE #2

- We are re-running the Build Challenge #1 the same as before, but substituting the materials with the more challenging materials. *For example, if students used straw connectors in Round One they will now use spaghetti. If students used cardboard they will now use notebook paper.*
- The students will once again have three rounds to build the highest free-standing tower possible. However, this time they will have more challenging materials to work with.
- Be sure to give students the same amount of time as before, and use the same height checkpoints used in Build Challenge #1 as well. These function as controls in this experiment.

Part Two: Data and Discussion

- Compare your data between Build Challenge #1 and Build Challenge #2. What was the difference? Was it a great difference or a small difference in the heights of your towers? What factors contributed to that difference? How much did your tower grow from round to round in each challenge?
- For groups who did not reach a checkpoint at any time and did not receive additional supplies, how did this affect your ability to achieve the next level or complete the challenge? How did you feel seeing other groups receive additional supplies?
- What feelings did you experience during Build Challenge #2? Were your feelings more positive or more negative? Compare your confidence in your tower construction between Build Challenge #1 and Build Challenge #2. How confident were you in Build Challenge #1 that you would meet the checkpoint requirements? How confident were you in Build Challenge #2 that you would meet the checkpoint requirements? In which round was time more of a stress factor?
- How would you feel if we had run all rounds of this experiment at the same time, with one group having the supplies from Build Challenge #1, and the other

group having the supplies from Build Challenge #2? How would you feel as a member of the group receiving the Build Challenge #1 supplies? How would you feel as a member of the group receiving the Build Challenge #2 supplies?

- Did it feel fair that only towers that reached checkpoints were given additional materials?
- Would you feel comfortable if you were judged only on your Build Challenge #2 tower?
- What would have been a more fair way to distribute the extra supplies than by meeting checkpoints?

EXTENSIONS

- Where do you see examples of inequality happening in your life, and what are some solutions to address that inequality? Decide which factors you can control, and which factors you cannot control.
- What systems in the world are currently unequal, and what solutions can you create to address that? Write a letter to a world leader and share your ideas for creating a solution to the problem.
- Create a job description for a leader who would address the issue of inequality. What qualifications, characteristics or personality traits should this person have?