

PLANETS

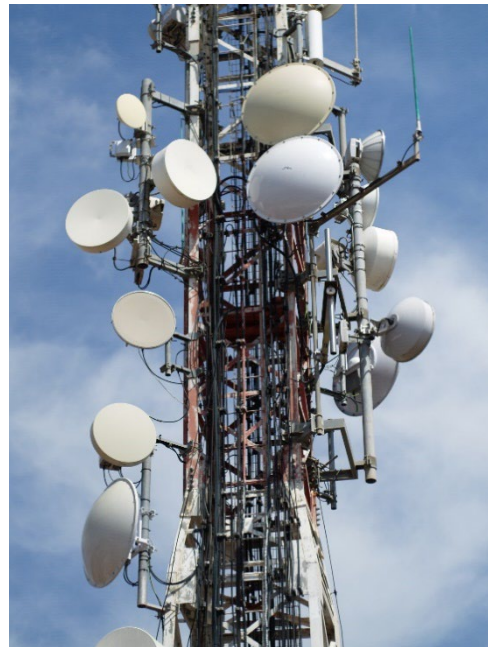
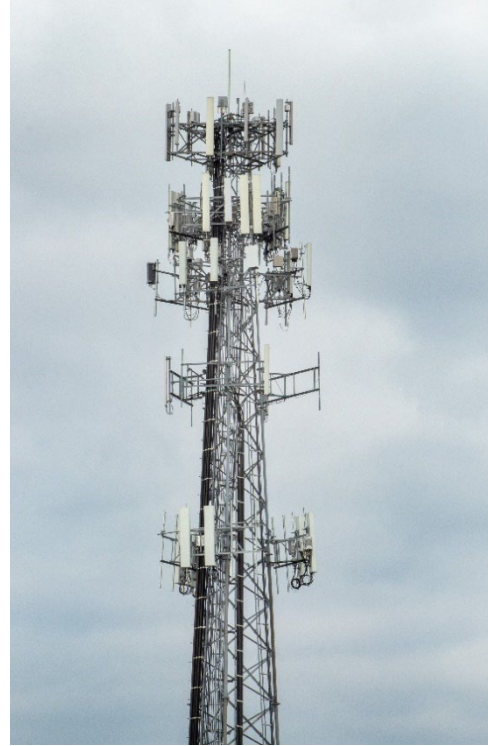
Engineering Notebook

Worlds Apart: Engineering Remote Sensing Devices

Name: _____

Engineering Prep Activity

Cell Towers



Did You Know?

Spacecraft need [antennas](#) to communicate with rovers and landers on a planet's surface, and to send images and data back to Earth. Antennas on Earth communicate with spacecraft all over the solar system.

More to Explore

Find out more about communicating with spacecraft on the PLANETS website.



<https://planets-stem.org/betars-youth-resources-page/>

Engineering Prep Activity

Needs and Limits

What your design **needs** to do

- Your tower must be at least 1 foot (30 cm) tall, not including the antenna. (The higher a tower is, the larger an area it will serve.)
- Your tower must hold up the antenna for at least 10 seconds.

Ways in which your design is **limited**

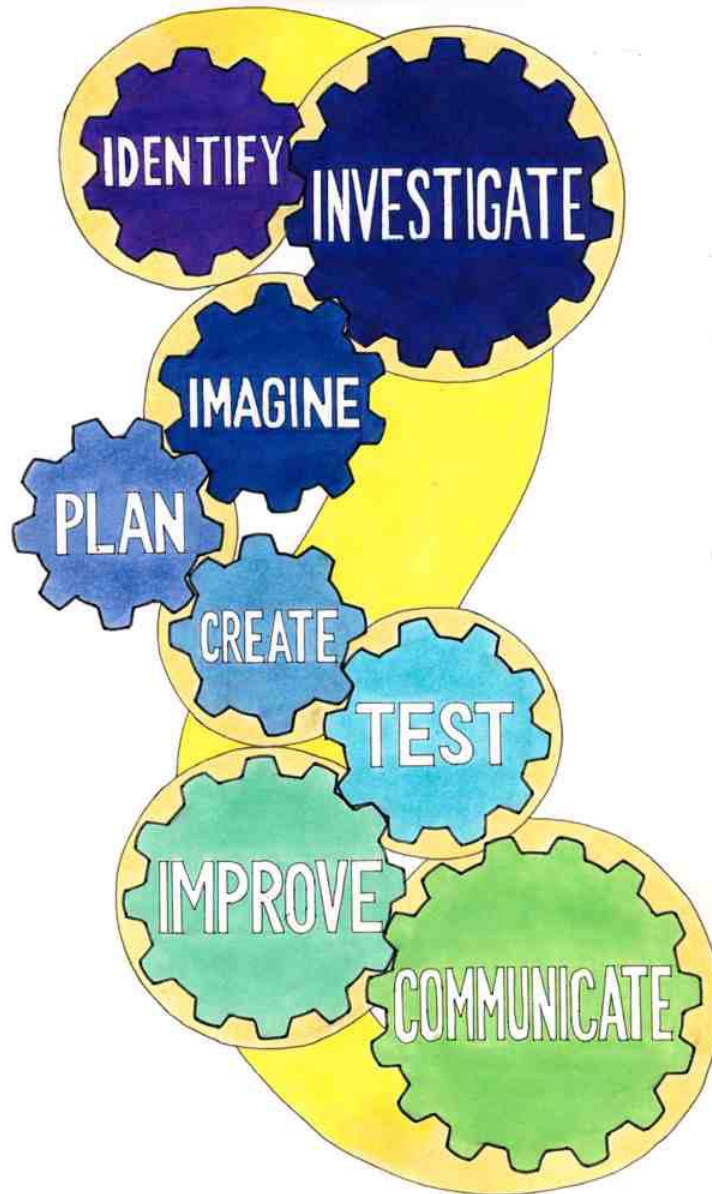
- Your group will have 100 index cards and masking tape as materials to build their tower.
- Your group will have a ruler and a pair of scissors to use as tools, but these tools cannot be part of the tower.
- You have 20 minutes to create your tower.

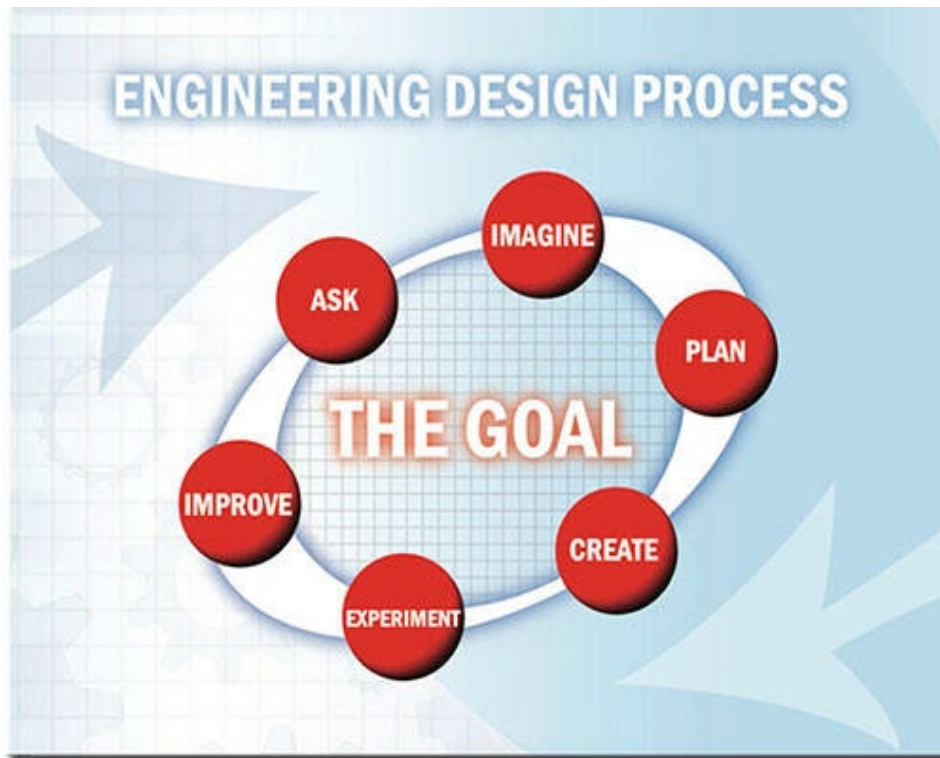
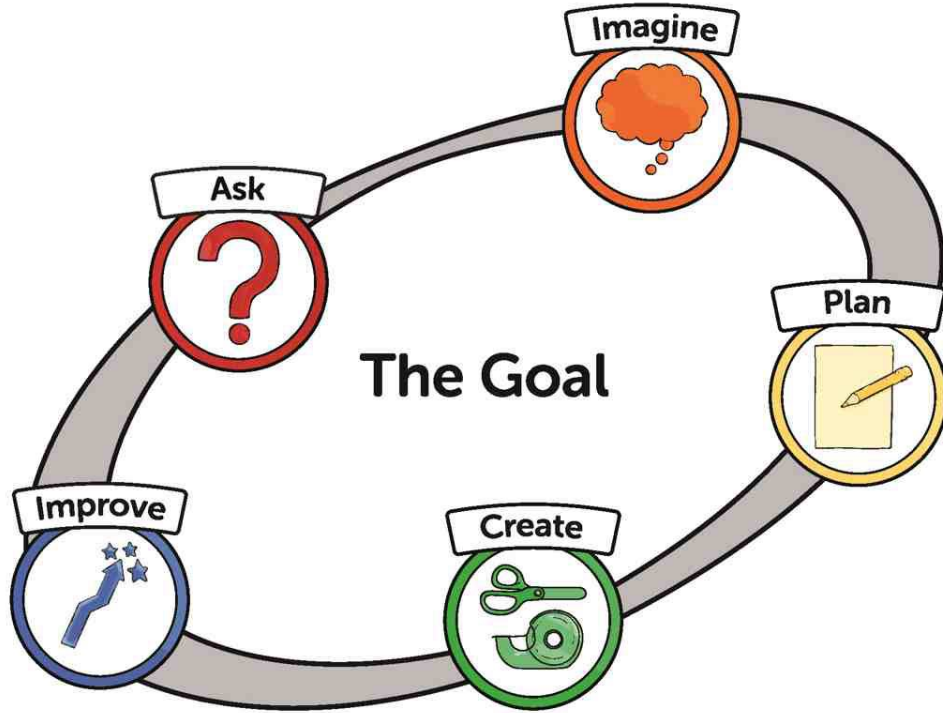
Did You Know?

Technology is any object, system, or process designed by people to solve a problem.

Engineering Prep Activity

Examples of [Engineering Design Processes](#)





Engineering Prep Activity

My Engineering Profile

Record the skills that you have for solving problems. You can write, draw, or check off boxes below.

Communication

- I give valuable feedback to others.
- I like sharing information.

Creativity

- I imagine lots of ideas.
- I come up with new ways of doing things.

Critical Thinking

- I solve problems.
- I make sense of complicated information.

Leadership

- I help people work together.
- I make sure everyone gets to share their ideas.

Persistence

- I learn from failure.
- I keep trying until I succeed.

Teamwork

- I work well in teams.
- I like giving and receiving feedback on my work.

Technical Skills

- I make things.
- I like working with different materials.

Record the skills you want to learn or develop for solving problems. You can write or draw below.