Word Count:
958
(excluding title, headings, captions, etc.)

ARCHITECTURE

CAREER READINESS

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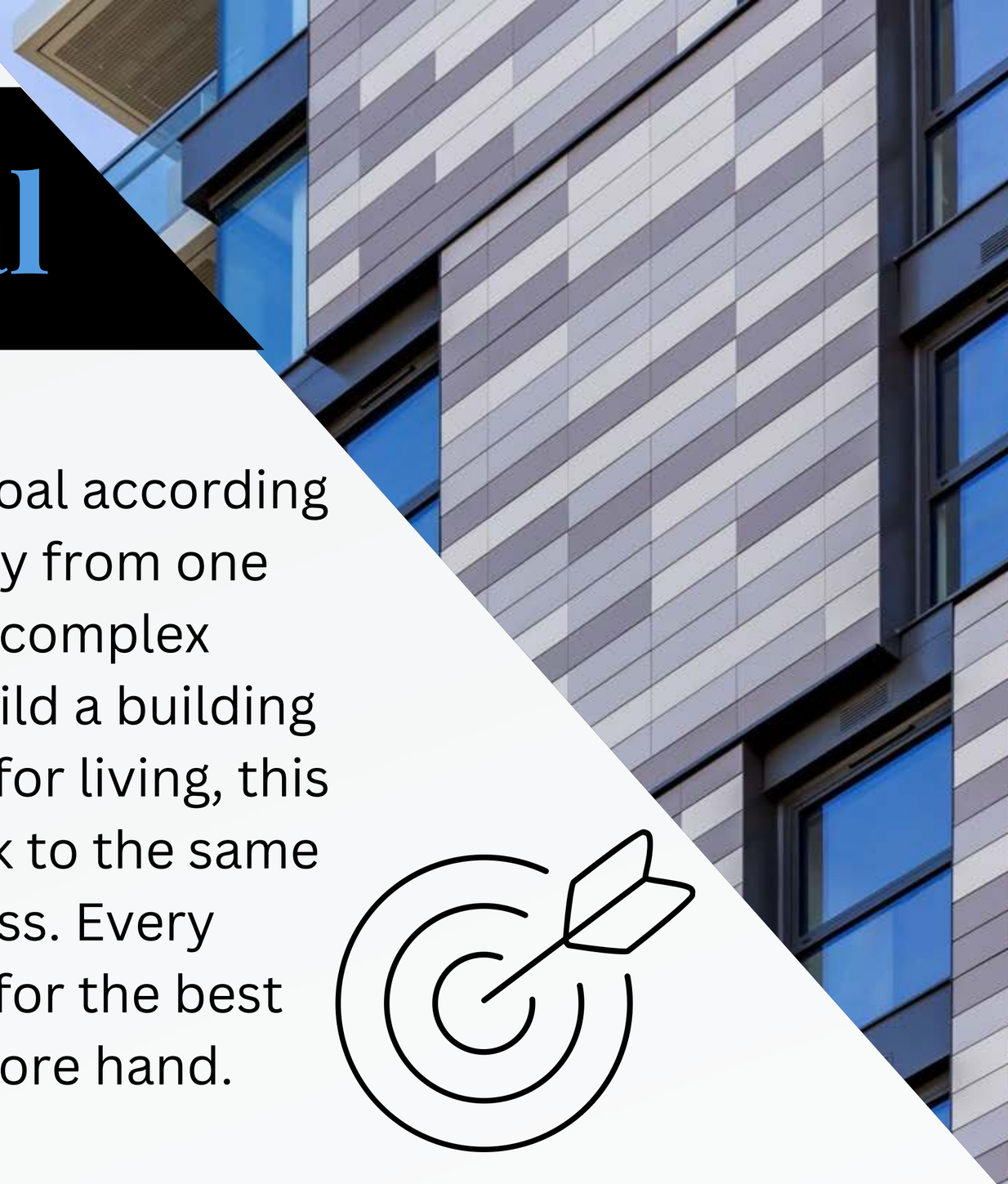
INTRO TO CAREER READINESS

In our Career Readiness project, we are going to put our heads together and discuss how the engineering design process relates to robotics and architecture. The engineering design process is a concept that involves multiple steps to have a successful design as a result. The steps of the engineering design process are identifying the problem, exploring, designing, creating, trying it out, and making it better. The engineering design process relates to robotics and architecture in multiple ways because both have a process of steps and an ending result.

Identify The Goal



In robotics, you have to achieve a certain goal according to the challenges, the challenges can vary from one simple challenge to multiple different complex challenges. In architecture, you have to build a building that has all the components to be suitable for living, this is a lot more complicated but it traces back to the same concept, the engineering design process. Every robot/building has an ideal end result so for the best results you should identify the goal before hand.

Explore The Goal

The meaning of exploring the goal in robotics is to try to understand what the goal is asking for you to do and ways to improve it. To explore the goal of robotics, you have to observe other people‘s designs to make your robot better and add different aspects to improve your robot. You can also look at different ways you can change your design for the better. In architecture, you have to explore different buildings and designs to improve your own design, such as adding or removing something. Architecture and robotics both relate to the engineering design process because you have to look at different types of things to improve your design you have to explore the goal you are given.

Add a subheading

Add a little bit of body text

Design

This is the step in the engineering design project where you design the robot to do what the task asks for. When you design you design something to achieve a goal in the end. You need to make sure you have all the components that are needed to design something or it could go wrong because every piece matters. This is the same in architecture, you also need to design a blueprint that does all the tasks asked and make sure it functions properly and safely.

Create

The step created in the engineering design process is in the name, you have to start creating what you designed in the last step. In robotics, you have to create a robot to perform the task. With what you observed from different people's robots and from pictures you can be inspired from you are able to piece by piece start to build the robot you designed. In architecture, you have to build a building with the design you improved by looking at different people's designs and in other ways. Both robotics and architecture relate to the engineering design process because they both have to create something with the design created before.

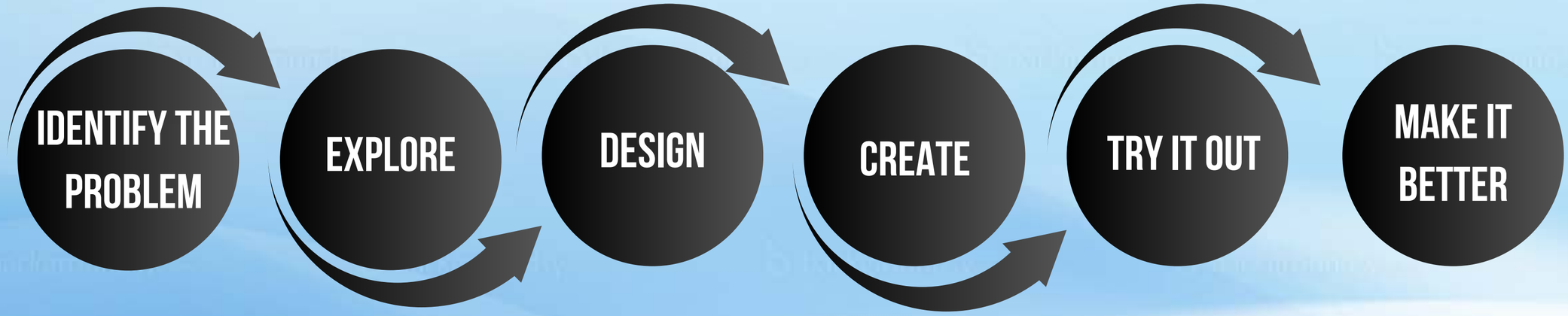
Try It Out

The next step in the engineering design process is to try it out. Try it out means to test it to find out how useful or effective something is. When you finish creating the robot you can move this step. Trying out the finished product, see how the robot works, and see if we need to add or fix anything. If so we'll add or remove it. In architecture, if a building has an issue or a problem with the foundation the construction workers will fix it so it does the task needed. Trying out the finished product confirms that it is working properly and sufficiently, or in some cases making sure it's safe to use.

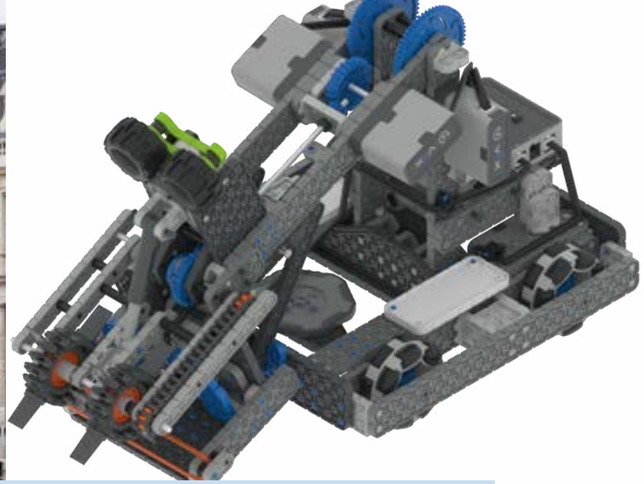
After you try it out you can find mistakes and things to fix in your design. You observe what the problem is and look at examples to help you find a solution to fix the problem with your design. In architecture when you create something you have to test it and see if it's safe to present or use because something with problems could cause issues.

Make It Better

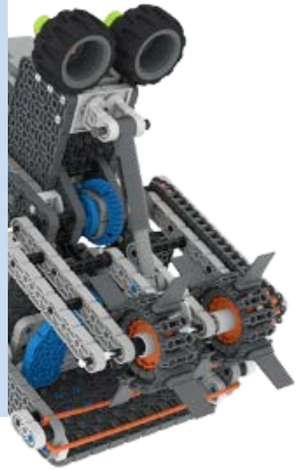
ENGINEERING DESIGN PROCESS





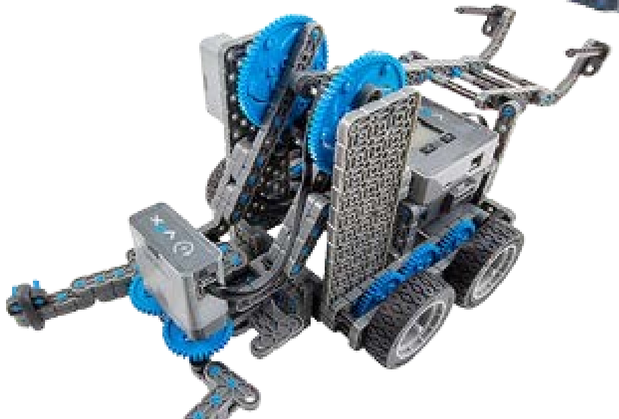



Compare & Contrast







Intake: Explained

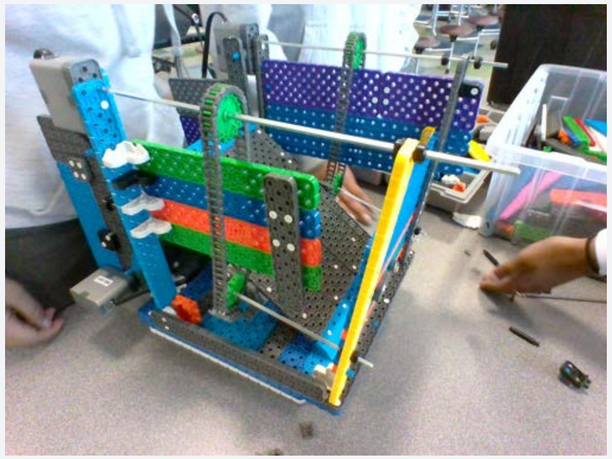
The intake on our robot is used to pick up the blocks so they fall onto the ramp. This is a necessary part of the robot because without an intake there is no way to collect the blocks.

The Ramp: Explained

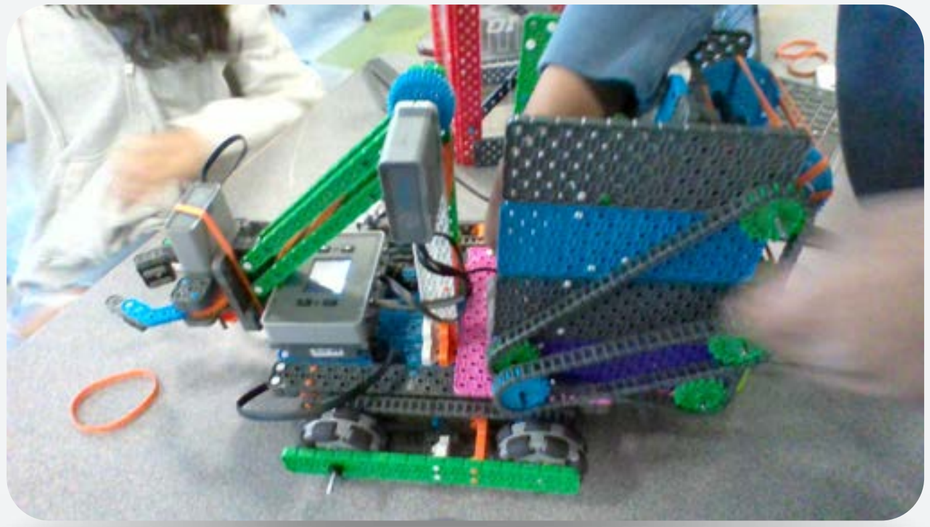
After the intake picks up the purple and green blocks the ramp will lift upwards and will score the blocks into the goal. One gear is connected to the top of the plastic piece with an axle and stopper. Another gear is attached at the bottom and the two gears are connected to the tread. To connect the ramp to the tread we had to attach it with an L-shaped piece which allows the robot to move if we have code. After the ramp was securely attached to the tread we made a code to make the ramp go up and down.

How the whole robot works

The intake will collect the blocks as the gear moves in a circular motion, and then the rubber band wall will apply more friction than a regular wall so the blocks will go up easier. After the intake moves the blocks up they get dropped onto the ramp and then the ramp will get moved up to score the blocks into the goal.

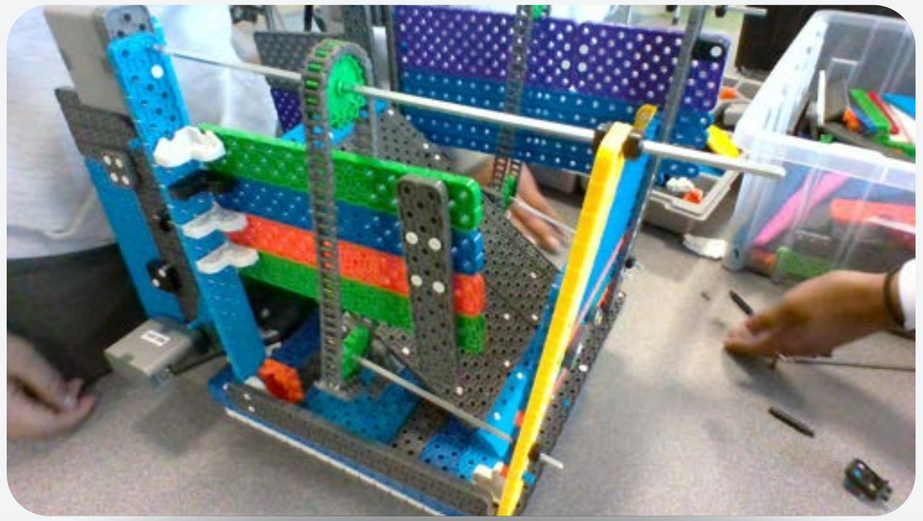


OLD VS. NEW



This is our old robot design which has a claw a different way for it to move. This was the most efficient way for our robot so we had to change to something faster and more convienent.

This is our new robot with a different design. In this design, there is no claw there is a ramp and the intake brings the blocks on the ramp. This design is more efficient because you can pick up more blocks at a time and it goes faster.



Thank you for your time!

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