Advanced

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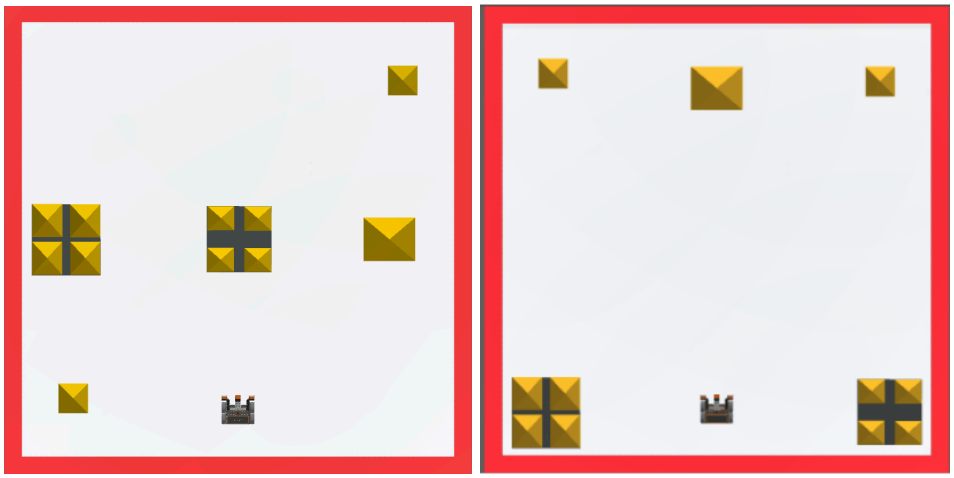
VEX CODE VR Activities

Sweep the Castle



Playground: Dynamic Castle Crasher

Challenges:

Level 1: Create an algorithm to knock all castle pieces off of one Playground layout using the VR Robot.

Level 2: Improve your algorithm to clear all castle building pieces off of three different Playground layouts.

Level 3: Improve your algorithm to clear all castle building pieces off of five different Playground layouts in under ten minutes.

Helpful Hints:

- Each time the Playground is reset, the layout of the buildings randomly changes. There are ten total Castle Crasher Playground layouts.
- Keep in mind that the algorithm should be written so that the VR Robot can knock over all five buildings regardless of the Playground layout.

- Castle building pieces will be detected as objects by the Distance sensor.
- Be careful not to fall off the side of the Playground because there are no walls!
- Use the *position of robot* block from the Sensing category or the location values from the Playground Dashboard to detect the position of the VR Robot on the Playground. This can be used to ensure the VR Robot does not fall off of the Playground.

  - Matching Python command:

```
location.position(X, MM)
```

- The Dynamic Castle Crasher Playground coordinates range from -1000mm to 1000mm for both the X and Y axis. For more information visit the Coordinate System- Playground Features article.
- Use the *color sensing* block from the Sensing category to detect the hazard area (red stripe) around the Playground. The hazard area is detected as color "red" to the DownEye sensor.

  - Matching Python command:

```
down_eye.detect(RED)
```

- Use the *timer value* block from the Sensing category to keep track of the time it takes to complete one or more Playground layouts.

  - Matching Python command:

```
brain.timer_time(SECONDS)
```