

Lego We Do Activities

Machine 1 – Merry-Go-Round Swing Ride

- 1) Program the machine to rotate clockwise at power level 5 for 3 seconds.



Show Mr. Desmond.

- 2) Program the machine to rotate clockwise at power level 5 for 3 seconds and then to rotate counterclockwise at power level 8 for 6.5 seconds. Your program will now have at least 5 code blocks.

Show Mr. Desmond.

- 3) Program the machine to rotate clockwise at power level 10 for 8.3 seconds, wait for 3 seconds, and then to rotate counterclockwise for 8.3 seconds. Show Mr. Desmond.

- 4) Program the machine to rotate both clockwise and counterclockwise at power level 10. Include sound blocks, wait blocks, message blocks, and repeat blocks.

Show Mr. Desmond.

Lego We Do Activities

Machine 2 – Merry-Go-Round Chair Lift

- 1) Program the machine to rotate clockwise at power level 4 and move for 5 seconds.



Show Mr. Desmond.

- 2) Program the machine to start at power level 4 and move for 5 seconds. Keep those code blocks and add a power level 6 block and a move for 5 seconds block. Do not change the direction.

Your program will now have at least 5 code blocks.

Show Mr. Desmond.

- 3) Keep all the code blocks from step 2. Add a power level 8 block and a move for 5 seconds block. Do not change the direction.

Your program will now have at least 7 code blocks.

Show Mr. Desmond.

- 4) Keep all the code blocks from step 3. Add a power level 10 block and a move for 8.6 seconds block. Do not change the direction.

Your program will now have at least 9 code blocks.

Show Mr. Desmond.

more on the next page

5) Keep all the code blocks from step 3. After moving forward at power level 10 for 8.6 seconds have the machine change the power level to 8 for 5 seconds, then to power level 6 for 5 seconds, and then to power level 4 for 5 seconds. Do not change the direction.

4 => 6 => 8 => 10 => 8 => 6 => 4

Show Mr. Desmond.

6) Add sounds to indicate the change in power level.

Add a message at the beginning of your program and a different message at the end of your program.

Show Mr. Desmond.

Lego We Do Activities

Machine 3 – The Oscillating Fan

- 1) Program the machine to rotate clockwise at power level 6 and move for 7.8 seconds.



- 2) Keep all the code blocks from step 1. Add a power level 8 block and a move for 7.8 seconds block. Do not change the direction.

Your program will now have at least 5 code blocks.

Show Mr. Desmond.

- 3) Keep all the code blocks from step 2. Add a power level 10 block and a move for 11.5 seconds block. Do not change the direction.

Your program will now have at least 7 code blocks.

Show Mr. Desmond.

- 4) Add sounds to indicate the change in power level.

Add a message in the beginning part of your program, a message in the middle part of your program, and a different message in the end part of your program.

Show Mr. Desmond.

Lego We Do Activities

Machine 4 – The Windshield Wipers

- 1) Program the machine to rotate clockwise at power level 4 and move for 5 seconds.



Show Mr. Desmond.

- 2) Keep all the code blocks from step 1. Add a power level 7 block and a move for 6.7 seconds block. Do not change the direction.

Your program will now have at least 5 code blocks.

Show Mr. Desmond.

- 3) Keep all the code blocks from step 2. Add a power level 10 block and a move for 10.4 seconds block. Do not change the direction.

Your program will now have at least 7 code blocks.

Show Mr. Desmond.

- 4) Add sounds to indicate the change in power level.

Add a message in the beginning part of your program, a message in the middle part of your program, and a different message in the end part of your program.

Show Mr. Desmond.

Lego We Do Activities

Machine 5 – The Conveyor Belt

- 1) Create a program with two code sequences to figure out which arrow will make the conveyor belt go forward and which arrow will make the conveyor belt go backward.



Show Mr. Desmond.

- 2) Create a program that will set the power level lower and make the conveyor belt move forward.

Show Mr. Desmond.

- 3) Place all 5 square blocks (spread out evenly) on the conveyor belt.

Program the machine to move forward so that only one block falls off the end (you must figure out how many seconds this takes).

Then program the machine to wait for the right number of seconds for you to place the block back on the conveyor belt at the end where the blocks would be starting.

Then have the machine move forward again so that the next block falls off the end. Have this program repeat so that you can get all five blocks off and then back on the conveyor belt.

Show Mr. Desmond.

more on the next page

4) Add sounds and messages to indicate the change from the machine moving to the machine waiting.

Show Mr. Desmond.

5) Create your own code sequence to control the conveyor belt.

Lego We Do Activities

Machine 6 – The Elevator

- 1) Create a program with two code sequences to figure out which sequence will make the elevator car up for one second and which sequence will make the elevator car down for one second.



Show Mr. Desmond.

- 2) Check in with Mr. Desmond so that your group can start with the elevator at the lowest floor.

Program the machine to raise the elevator car to move precisely from the lowest floor to the middle floor. [You must figure out exactly how many seconds this takes.]

Show Mr. Desmond.



more on the next page

3) Add to your program. Once the elevator car has moved up to the middle floor have it wait for 6.5 seconds and then move back down to its starting position on the lowest floor.

Add sounds and messages to indicate the change from the elevator moving to the elevator waiting.
Show Mr. Desmond.



4) Add to your program. Have the elevator car move from the lowest floor up to the middle floor and have it wait for 6.5 seconds.

Then have the elevator car move from the middle floor up to the top floor and have it wait for 6.5 seconds.
Add sounds and messages to indicate the change from the elevator moving to the elevator waiting.
Show Mr. Desmond.



5) Add more to your program. Have the elevator car move back down to its starting position on the lowest floor.

Add sounds and messages to indicate the change from the elevator moving to the elevator waiting.
Show Mr. Desmond.