**Making Shapes**

**Master 7a**

**Using a Block-Coding Program**

Which of the images below did each set of block code create?
How do you know?



**Making Shapes**

**Master 7b**

**Using a Block-Coding Program**

How are the code sequences alike? How are they different?

What do you think *move*, *turn*, *repeat*, and *point in direction*might mean?

Notice the colour coding that is used to organize blocks according to function: blue indicates Motion blocks; orange indicates Control blocks, and dark green indicates Pen.

Click on the link: <https://scratch.mit.edu/projects/481518787/>,
then click  at the top of the page to run both code sequences concurrently. Discuss what happens.

Does this help you decide which code goes with which sprite (Cat or Bat)? Explain.



**Making Shapes**

**Master 7c**

**Using a Block-Coding Program**

**Part A: Altering Code to Make Matching Rectangles**

In the program you looked at as a class, Cat and Bat are drawing rectangles.

When both code sequences are run at the same time, the rectangles overlap.

You are going to investigate how you might alter the code so the rectangles match exactly.

  

**Making Shapes** (cont’d)

**Master 7d**

**Using a Block-Coding Program**

**What to Do**

Work with your partner.

Modify this existing project: <https://scratch.mit.edu/projects/481518787/>

● Log in if your teacher would like you to.

● Click **See Inside** to alter the code  ****or, if you’ve logged into Scratch, click **Remix** to get your own copy of this project. 

● Alter the code so that the rectangles overlap and match exactly.

● Change some of the numbers, then see how your changes impact the outcome (what Cat or Bat draws).

● Talk about what you’re changing and why. Change just 1 thing at a time!

Did you use a Repeat Block to make the code more efficient? Explain.

**Challenge:** Alter the code to make different overlapping quadrilaterals.

**Making Shapes** (cont’d)

**Master 7e**

**Using a Block-Coding Program**

**Part B: Altering Code to Make Different Quadrilaterals**

Modify this existing project: <https://scratch.mit.edu/projects/552699263/>

Cat and Basketball are trying to create quadrilaterals.

  

What do you notice about these code sequences?
How do you change the pen colour? Thickness?
Notice the repeat and the glide to (*x*,*y*).

**Making Shapes** (cont’d)

**Master 7f**

**Using a Block-Coding Program**

Are both shapes actual quadrilaterals?

Alter the code sequences to create different quadrilaterals.

Then, alter the code so that Cat’s quadrilateral and Basketball’s quadrilateral don’t overlap.

When altering concurrent code that incorporates the **erase all** block, ****you might find it easier to remove the erase all block and put it to the side. You can always click it in between executing (running) the code each time.

**Challenge:** Create different quadrilaterals or try making triangles.

**Making Shapes** (cont’d)

**Master 7g**

**Using a Block-Coding Program**

**Part C: Using Conditional Statements to Make Parallelograms**

|  |  |
| --- | --- |
| Modify this existing project: <https://scratch.mit.edu/projects/552702669/> | Graphical user interface, application  Description automatically generated |

Alter the code to make parallelograms for Cat and Basketball.

Alter the code so the parallelograms don’t intersect.

Adjust the Balloon code in different ways to get used to the Conditional Statements. Consider changing the sound, the action that occurs when the balloon is touching each sprite, the frequency (wait time) of the balloon moving, the number of repeats…

**Challenge:** Create additional new parallelograms or triangles that don’t intersect.

**Making Shapes** (cont’d)

**Master 7h**

**Using a Block-Coding Program**

**Tips**

● You may wish to get an account and be logged in
so that everything can be saved.

● If you are logged in, when you are looking at samples, or at your My Stuff, click **See Inside** to see or edit the code.

● When you click , the code executes, or “runs”.

● You can click the values in the code and change them.

● You can click and drag any of the blocks of code out of the script and leave them out or change their order.

● To see the code for Bat you need to click on the Bat sprite.Right now, the code would be shown for the Cat.

● You can move the blocks in the code  to different spots in the code to change the repeating action of your sprite (Cat or Bat).

**Making Shapes** (cont’d)

**Master 7i**

**Using a Block-Coding Program**

**Self-check in**

What have you learned about block coding so far?

Did you get stuck? If so, what did you do?

Did you turn to your classmates for help? If so, how did they help?

What are you doing to help the learning of others?

This is “hard fun.” What do you think we mean by “hard fun”? What other activities do you do that are “hard fun”?