Problems to Solve!

• Play music in the background the whole time

• Make the pen go up and down to create dashed lines

• Make one object move the same as another object
This is the Main Loop. It sets up the PenTime variable, then it sets the cat in motion.

This keeps raising and lowering the pen, in between it waits some amount of time, given in "tenths of a second."

This keeps playing a background sound over and over.

This keeps transmitting the cats' X and Y to other sprites.
This keeps moving the hat to wherever X and Y say to go.
Problems to Solve!

• Play music in the background the whole time
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• Make one object move the same as another object
Problems to Solve!

- Play music in the background the whole time
- Make the pen go up and down to create dashed lines
- Make one object move the same as another object

Three things going on here:
1. Waiting for some number of seconds
2. Doing a division
3. Using a variable called PenTime
Anywhere you can use a number, you can also use an Operator

There are a bunch of other operators we can get into sometime if you want:
Problems to Solve!

• Play music in the background the whole time

• Make the pen go up and down to create dashed lines

• Make one object move the same as another object
We want the hat to ride on the cat’s head. But, the hat can’t ask where the cat is right now.

But, the cat can *tell* the hat where it is through something Scratch calls **variables**.

Here, we use two variables we created called $X$ and $Y$. 

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**Scratch Variables**

![Image of Scratch variables](image.png)
Anywhere you can use a number, you can also use a Variable
This keeps moving the hat to wherever X and Y say to go.