

Game Design Challenge

Kathleen Mazurek 2017

Today's Task

Today, we will break into teams
and remix a video game.

One person will be the **designer**

and one person will be the **developer**.

At the end of the week, we will have a completed game
with character designs, environment designs and code.



Video Games are built by design teams.

Designers create the look of the game.

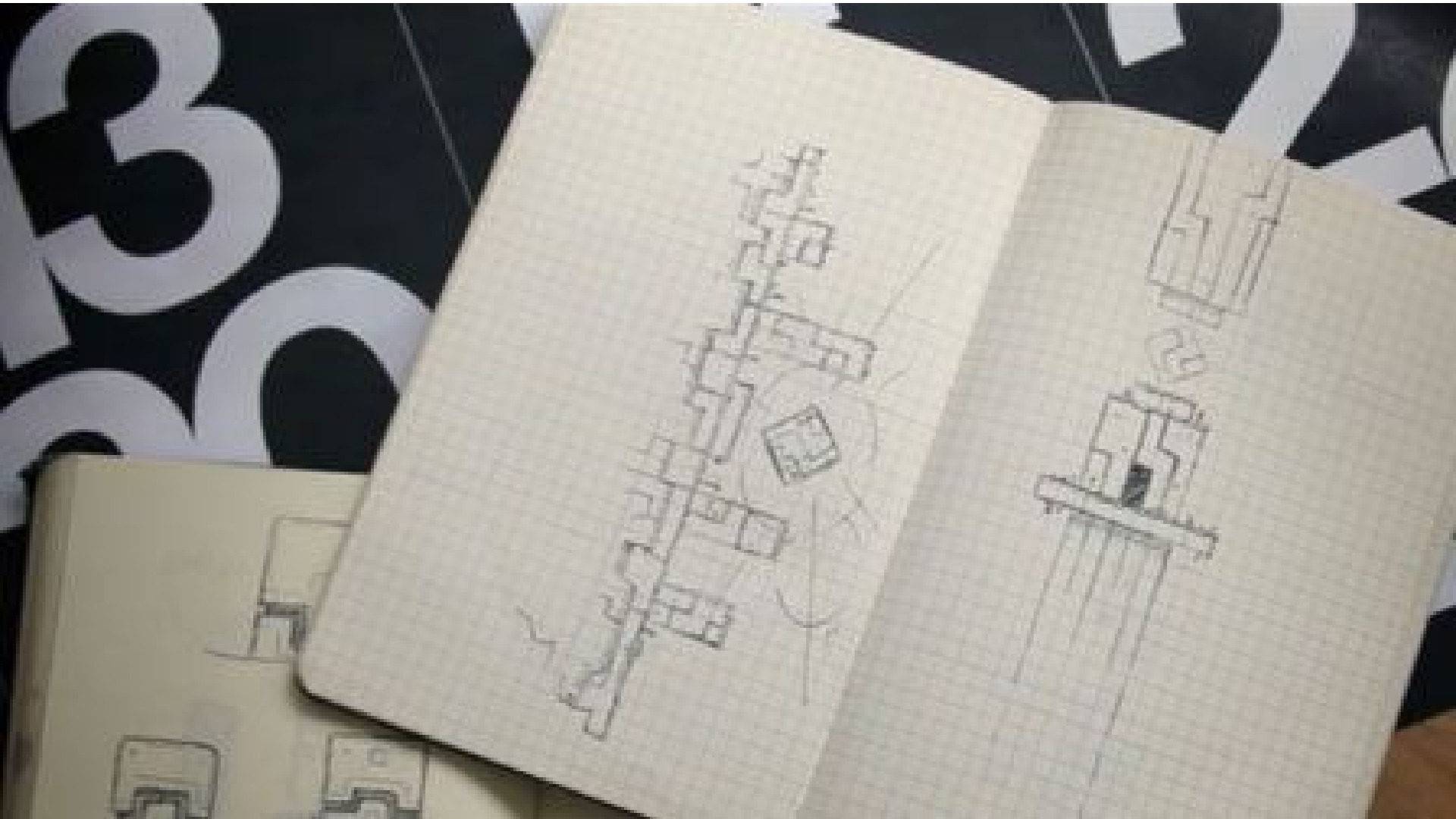
Developers create the functions of the game.

Development Teams

[Let's see how video game development teams work...](#)

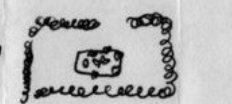
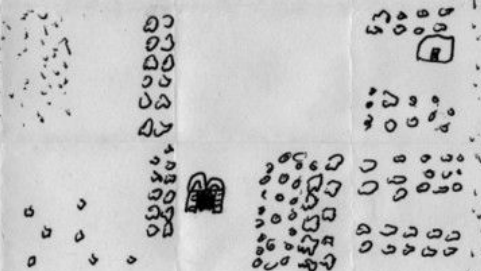
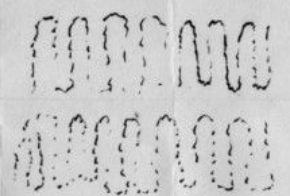
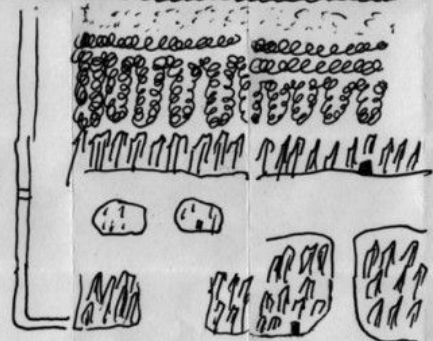
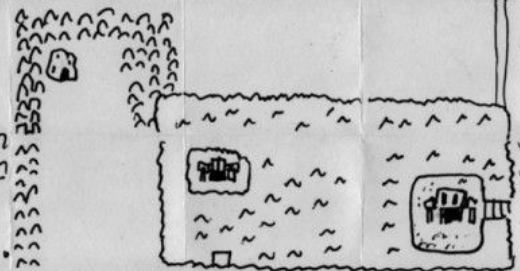
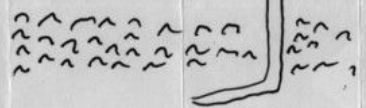
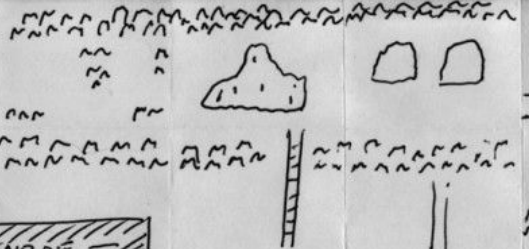
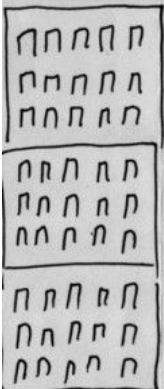
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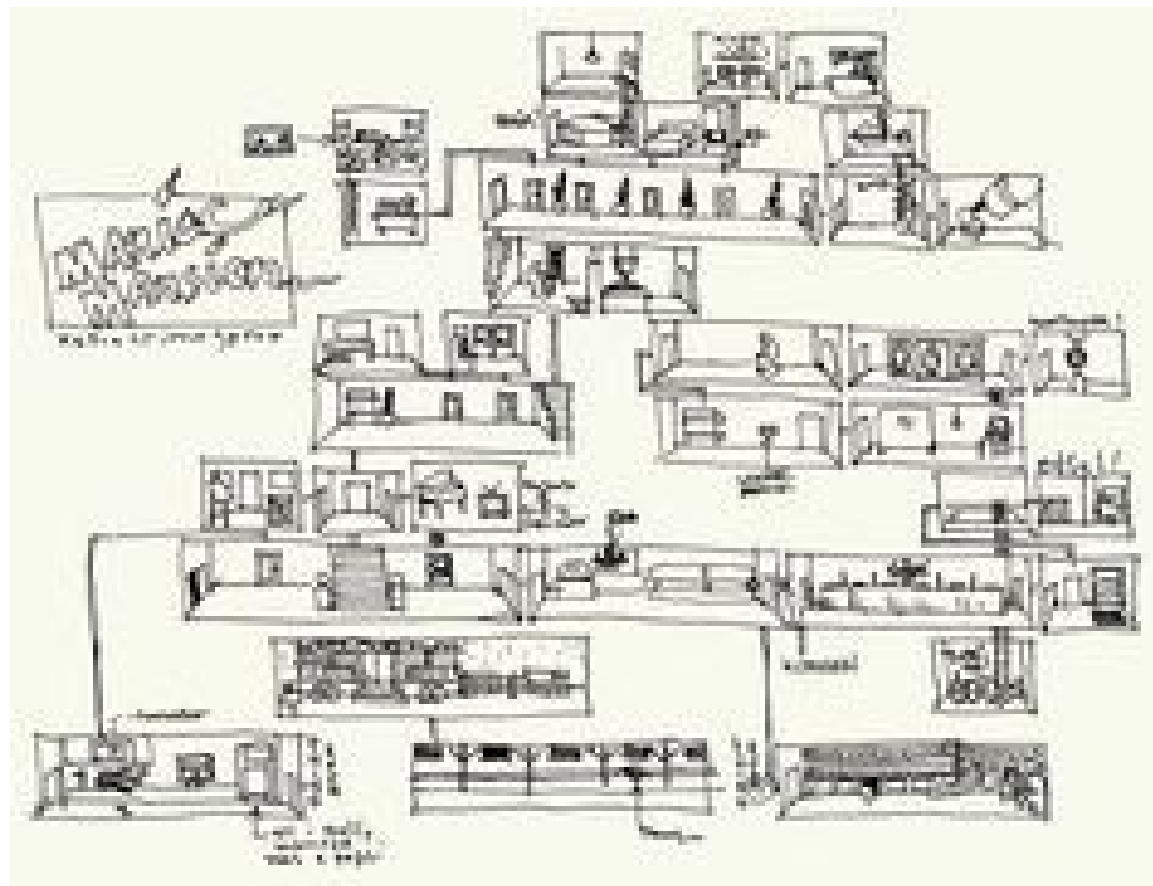


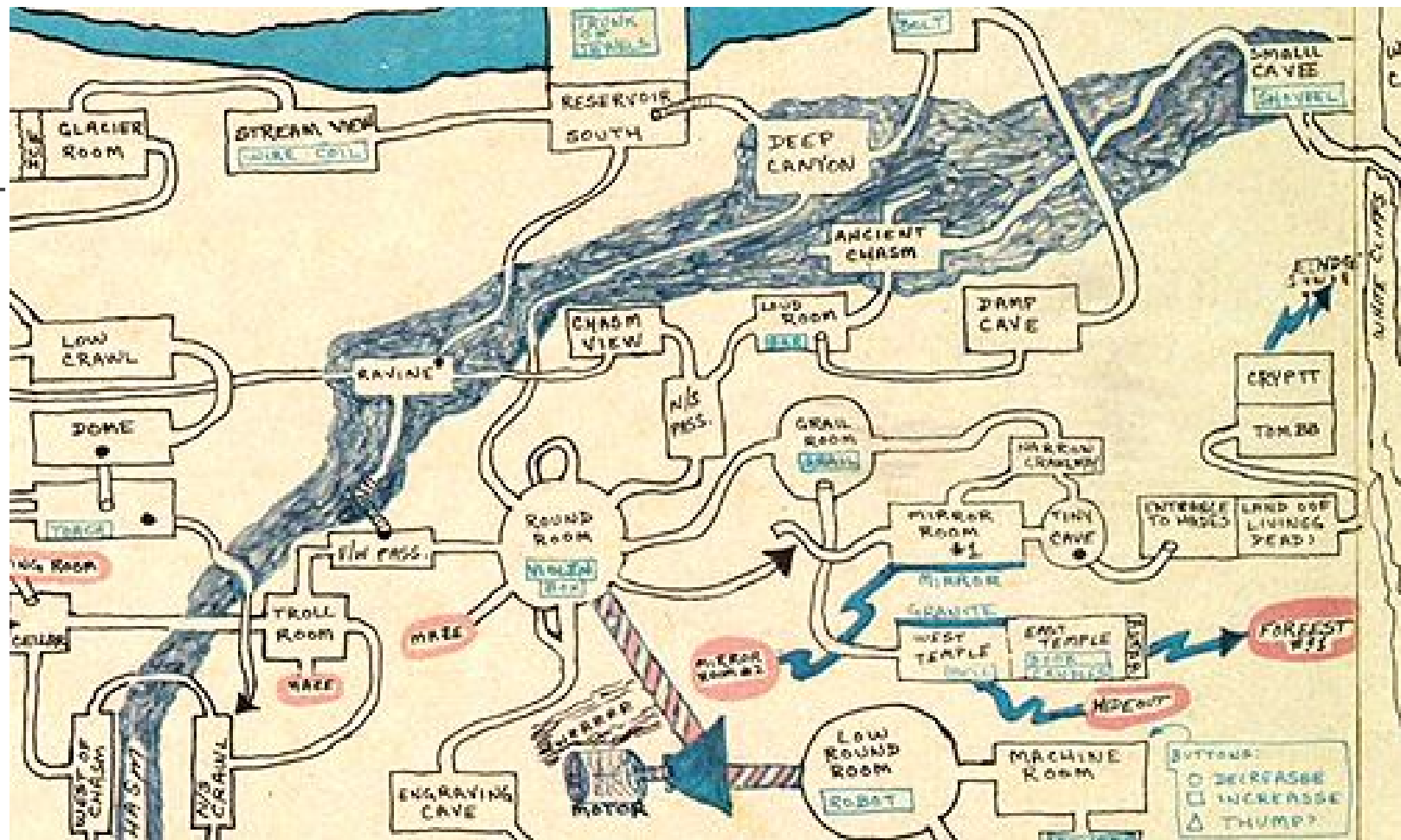












Your Design Timeline

Day 1—design the characters for your game; **write your character's story**

Day 2— **use shapes to create your character (1)**; **unscramble the code (2)**

Day 3—**sketch the background and choose the best match from a bank (2)**; **Test your code using sound, looks, and motion blocks, (1)**

Teams

Awards Show at the End of the Week

Most Cohesive Project (sketches match design perfectly)

Most Productive Team (best team communication and work ethic)

Most Innovative Team (team that takes the project to the next level after they finish their initial challenge)

Most Positive Team (from start to finish, positive attitude)

How do we become award winning?

1. **Communication**
2. **Empathy and respect**
3. **Project Management**
4. **Accountability**

Industry rockstars are indeed awesome, but successful companies sustain and promote teams.

Day One: Tasks

Your team will receive a generic game assignment.

*racing challenge

Designers: you will create the character and environment design sketches (will it be a car race? Dragon race?

Olympic race?)

Developers: you will write the backstory and details to the action in a script or story board

Day Two: Tasks

Now we will bank computer time with our team.

The designer will use the computer for the first half of class.

The developer will use the computer during the second half of class.

Designers: Just design up to two character sprites during your allotted time. Use shape to build your form and to create details.

Developers: Unscramble the code from your puzzle bag and tape it in the sequence you feel would work best.

Enter the code during your allotted computer time; you have today and tomorrow to enter, test, and refine your code.

Scratch Demo

Let's take a look and see how [Scratch](#) works for a developer and a designer.

Day Three: Tasks

Designers: sketch your environment using vector graphics, using shapes to create forms

Developers: use your time to continue to test your code for moving your racers and changing your background.

If you finish early, you can test different command blocks with your sprite. Use **Events**, **Motion**, **Loops**, **Looks**, **Sounds**

Code Functions Review

Events

Motion

Control/Loops

Looks

Sounds

By Wednesday: racing game complete

1. Designers will have Racer 1 sprite and Racer 2 Sprite, finish line, track background and victory background
2. Developers will program racing commands into the sprites created by the designers
 - a. basic code from code puzzle entered for each racing sprite
 - b. have code entered to change background color
 - c. Bonus code: sound, additional looks (other color or costume changes)
 - i. Use test sprites and backgrounds, focus on the code
 - ii. Reset function

If you finish early...

Work on your own game using the code that you have learned.

If you want to skill up, you can log into the Scratch Wiki to learn more codes.

Monday and Tuesday

- A. Designer and developers finish their racing game
 - a. Racer one and racer two have their code
 - b. Background 1 (track) and background 2 (victory screen) completed
 - c. Background reset code entered for one sprite

- B. Use your time to create a third game based on what you know
 - a. Skill up by visiting [Scratch Wiki](#) and research code for:
 - i. [Jumping](#)
 - ii. [Projectiles](#)
 - iii. [Virtual Pet](#)

Thursday-Station Day Special:

Game release day, party, awards ceremony!

Game Design Challenge Part 2.

Design Your Own Game: Exploring Coding Terms

This week...

Monday- Sketch your ideas for your game

Tuesday-Unplugged Lesson: How Algorithms Work

Wednesday-Studio Day

Thursday-Final Studio Day/Show and Tell

Today's Task:

We will review the blocks we've learned so far and review **sensors** and **data blocks**.

We will:

Login to our projects on scratch

Use Scratch wiki or scratch tutorials to finish our game

We will save our work before logging off

Review--"Car Bingo"

We learned about:

Controls/Loops

Events

Looks

Sprites

Motion

Sounds

Backgrounds

Algorithms

Why is debugging important?

Today's Task:

Today, we will sketch our characters and draft our story to determine code we will need to learn for our game.

We will learn code terms every day, today we will learn about **loops** and **events**.

Coding Corner

[Why are loops important?](#)

[What are big events?](#)

Today's Task:

Today, we will explore algorithms and see how we will fit them into our game.

1. Play the algorithms game
2. Start designing our backgrounds and sprites.

— — —

How do algorithms work?

1. Captains, set up your board
2. Robots, wait to join your team
3. We will see which teams finish the challenge first, using strong communication skills and cooperation.

This Week....

We will design and code our games, using print outs or Scratch Wiki was a resource.

Monday: Studio Day; Debugging Intro

Tuesday: Relay Programming; Studio Day

Wednesday: Final Studio Day/Presentation

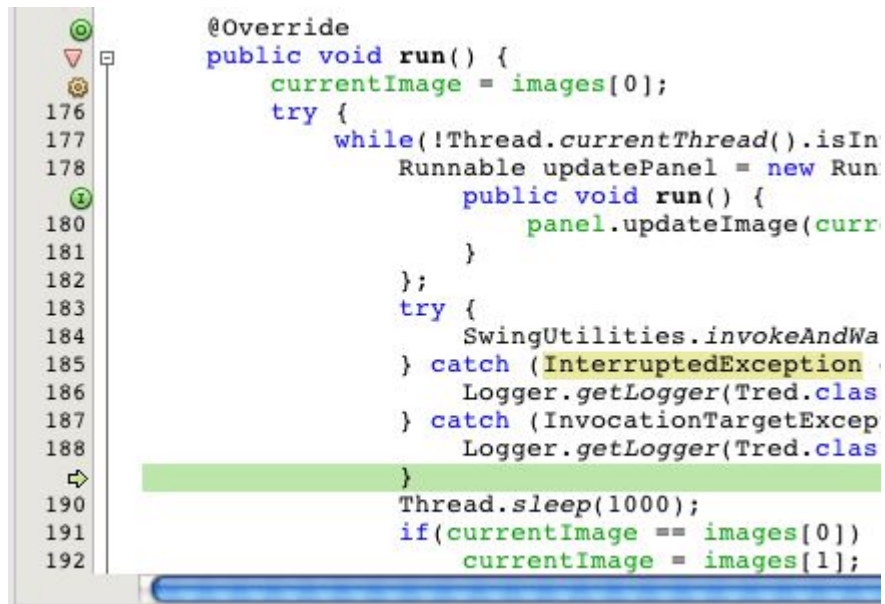
Thursday: Station Day

Coding Corner

Today, we are going to learn a new term we can use when we program our games.

This concept is called

[debugging](#).



```
@Override
public void run() {
    currentImage = images[0];
    try {
        while(!Thread.currentThread().isIn
            Runnable updatePanel = new Run
                public void run() {
                    panel.updateImage(curr
                }
            };
        try {
            SwingUtilities.invokeAndWa
        } catch (InterruptedException
            Logger.getLogger(Tred.clas
        } catch (InvocationTargetExcep
            Logger.getLogger(Tred.clas
        }
    }
    Thread.sleep(1000);
    if(currentImage == images[0])
        currentImage = images[1];
}
```

Our Relay:

We will work in pairs:

Programmer: Write a series of arrows, indicating steps for your robot to follow to reach the librarian's desk from the middle bench.

Robots: follow the steps given to you EXACTLY.

i.e. if you are told to walk 10 steps and then turn right once, that is as far as you can move.

Winner

The robot that makes it closest to the librarian stand.

You cannot walk past the stand or fall short.

Programmers, you can only guess, we will all start in the middle before we test our code.

Debugging

How many groups made it to the finish line?

How would you debug your code to change it?

Tuesday

Today, we will break into your teams and you will continue to work on programming and designing your specific game.

1. Use vector graphics or the Sprite library
2. Consult the Scratch Wiki, or your code sheet to use the code specific to your game:
 - a. Virtual pet
 - b. Adventure/obstacle
 - c. Racing