Name: Date:

Design & Technology 9 Section:

**Scratch Project 3 – Independent Project**

**Plan & create your own Scratch project to demonstrate your knowledge of the tools we’ve learned about so far.**

**Directions:**

1. Review the **design specifications** on page 3.
2. Brainstorm ideas with your partner. Once you select your best idea, complete the **design** and storyboarding worksheets on page 4-6.
3. Write a step-by-step **plan** for how you will use your time to create your program, on p. 7. If you prefer to type your project, you may create a Google Doc and share it with me. Include your plan and evaluate sections in the same doc. Name the file **Scratch Independent Project Your Full Name**.
4. Create your program. Test each part as you go to make sure it works the way you expect it to.
5. **Troubleshoot** – try making small adjustments to fix things that don’t work. Your first ideas for how to do things might be wrong, but that’s part of the process!
6. When the project is complete or you have to stop for the day, open the **File** menu and choose **Save As**. Save the project under the file name **Independent Project Your Names**. For example, **Independent Project Miguel & Santiago**.
7. **Email the project as an attachment** to yourself, your partner, and (when complete!) to me, kvaughan@brooklynprospect.org.
8. Complete the **evaluation** on your project on p. 8-9 (or email to me as a Google doc).

**Effort Grade Components:**

* CW: Completed Scratch project emailed to Ms. Vaughan by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* HW: Written evaluation handed in or shared (Google Doc) by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Journal: Student’s project journal is up-to-date, complete, & thoughtful.

**Achievement Grade Rubric**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criterion** | **5-6** | **3-4** | **1-2** | **0** |
| **Plan** | The student(s) produce a plan that **describes in detail** the project they plan to create. The student has thought through how to accomplish this in Scratch, including **specific blocks and logic** that may be used. | The student(s) produce a plan that **describes the project**, and **mentions some ideas** for how to do this in Scratch. | The student(s) produce a plan that includes **some details** of the project, and/or **some ideas** about how to do this in Scratch. | The student does not reach a standard described by any of the descriptors for levels 1-6. |
| **Create** | The student(s) demonstrate sophisticated knowledge of Scratch by **completing the project to meet ALL of the design specifications successfully.** The project is creative & interesting for the user and all the parts fit together to make a meaningful whole. Programming tools are used in sophisticated ways. The student(s) compare the final project to the original plan and **justify any changes to the plan**. | The student(s) demonstrate knowledge of Scratch by **completing the project to meet MOST of the design specifications** successfully. The student(s) compare the final project to the plan and describe any changes to the plan. | The student(s) show **partial knowledge** of Scratch by **attempting** to complete the project as outlined in the design specifications. Many features don’t work or are missing. The student(s) mention any changes to the original plan. | The student does not reach a standard described by any of the descriptors for levels 1-6. |
| **Evaluate** | The student **thoughtfully** **& completely** evaluates the process of creating the Scratch project, describes challenges and successes, and discusses ideas for further improvement of the final project.  | The student **evaluates** the process of creating the Scratch project, mentions challenges and/or successes, and mentions ideas for further improvement. | The student **partially evaluates** the project and/or the process of creating it. | The student does not reach a standard described by any of the descriptors for levels 1-6. |
| **Attitudes** | The student **consistently** displays a satisfactory standard in **both**:* personal engagement (motivation, independence, general positive attitude)
* attitudes towards safety, cooperation, respect for others
 | The student **frequently** displays a satisfactory standard in **both** personal engagement and attitudes towards safety, cooperation, and respect for others. | The student **occasionally** displays a satisfactory standard in **either** personal engagement or attitudes towards safety, cooperation, and respect for others. | The student does not reach a standard described by any of the descriptors for levels 1-6. |

**Design Specifications:**

1. **Sprites**: Your project must include at least 2 sprites. At least one of them must be your original drawing.
2. **Costumes**: The sprite you draw by hand must have at least 3 costumes that appear throughout the project.
3. **Stage**: You must use a stage. It may be drawn by hand or imported.
4. **Motion**: At least one of the sprites must move at some point in the project, using the (x,y) coordinate system to direct its motion.
5. **Loops**: Your project must use at least one loop, created using one of the blocks shown below.



1. **Broadcasting & Receiving Messages:** The stage or one of the sprites must broadcast at least one message, which must be received by another object, causing it to do something. Use the following blocks to do this.



1. **Variables**: You must use a variable to create a switch that turns on or off when the variable reaches a certain number, causing something to happen.



1. **Query (“Ask”)**: The program must ask the user to answer a question. Something should happen depending on their answer.



1. **Story/Experience**: Your project should use all these pieces to tell a story or provide a meaningful experience for the user. It should be creative and fun.

**Project Design, part 1**

**Sprites & Costumes:** Sketch and/or describe the sprites you will use and the costumes they will have. You must have at least 2 sprites, with at least one drawn by hand, with 3+ costumes.

**Stage:** Sketch and/or describe the stage(s) you will use.

**Project Design, part 2**

**Summary:** What is the overall purpose of the program, story that it tells, or experience that it provides? Describe what you will make in 1-3 sentences that “pitch” your idea to the user, convincing him or her to try it!

**User Experience:** Storyboard (sketch & write) what the user will experience when interacting with this program. **Use the storyboarding worksheet on the next page.**

**Design # Storyboard**

**Headline:**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |

**Plan:** You will have **4 class periods** to work on your project, or **a total of about** **2.5 hours of class time**. You will probably need to assign yourself homework to continue your work at home, during office hours, or during study hall. Plan how you will use your in-class and homework time. Write **a list of steps** you will follow to create the project. **Include resources you will need, and how much time each step should take.** Don’t forget to include time for troubleshooting!

**Example of an (incomplete) plan:**

1. Draw dancer sprite using Scratch. (15 min.)
2. Create 3 costumes for different dance moves for dancer sprite. (30 min.)
3. Create combo block to make the dancer dance to music. Use “forever” loop. (15 min.)
4. Create variable called “turns.” (2 min.)

**Our plan: (Number your steps!)**

**Project Evaluation**

1. Describe what you created in this project.

1. How does your final project compare to what you planned? What changes did you make to your plan? Why?

1. How well does your final project meet the design specifications? Refer back to the list of design specifications, and explain which ones it meets and which ones it does not meet.
2. How would you improve the project if you were to spend more time on it? What else would you want to do, add, or improve? Explain.
3. Evaluate your own use of the design cycle in this project. Talk about what went well, and why, as well as what you struggled with, and why. Discuss what you might do differently in the future. Be sure to talk about ALL stages of the design cycle – for this project, **design, plan, create, and evaluate**.