## Multitasking Mania!

**Lesson 9: Creating Multitasking Project**

**Problem Statement:**

Company BleepBlorp has problems with efficiencies in the workplace that they think might be related to the employees trying to do many things at once. Company BleepBlorp makes many products but has a small group of employees, and business is growing. They need to keep up with demand. Company BleepBlorp doesn’t want to hire more workers but wants to get things done more efficiently. They have asked you for help and expertise in determining the impacts of multitasking if any, and to help their employees understand the impacts as well through a computer game to be used for training purposes.

Your task is to create both a computer-based task and non-computer-based task that helps employees evaluate the effectiveness of multitasking and helps them plan their work efficiently. Your completed project should include the following criteria/constraints:

* A computer-based game that takes one minute to complete
* A simultaneous “offline” activity
* A method to collect data

**Lesson Overview:**

Students are using their newly acquired information and Scratch skills from prior lessons to design a game that tests the effectiveness of multitasking.

**Learning objectives:**

* To create a Scratch based game and off-line task that meets the criteria and constraints of the Multitasking Project.

**Lesson standards (NGSS, CCSS, CTE):**

|  |  |
| --- | --- |
| Computer Science (CTE) | |
| CTE 2-A-5-6 | Develop programs, both independently and collaboratively, that include sequences with nested loops and multiple branches. [Clarification: At this level, students may use block-based and/or text-based programming languages.] |
| CTE 2-A-6-10 | Use an iterative design process (e.g., define the problem, generate ideas, build, test, and improve solutions) to solve problems, both independently and collaboratively. |
| Science (NGSS) | |
| MS-ETS1-1. | Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. |
| MS-ETS1-4 | Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. |
| Mathematics (CCSS) | |
| 6.NS.C.8 | Apply and extend previous understandings of numbers to the system of rational numbers. |

**Soft skills (21st Century Skills):**

* Technology literature
* Learning and Innovation
* Life and Career

**Locally and/or personally relevant for students:**

* Students often are required to multitask in their daily lives

**Connections to Career and Educational Pathways:**

* Introduction video from code.org (shown in Lesson 3) details career opportunities in programming

**Materials:**

* Computers - 1 computer per pair of students
* Scratch Teacher Account with Student Scratch Accounts
* A copy of BleepBlorp Multitasking Project Planning Sheet for each student/pair from lesson 8

**Lesson preparation:**

* Knowledge of the Scratch Platform

**Time required:** 45 minutes at a minimum

* 45 minutes for Multitasking Project creation

**Grouping of students for instruction:**

The recommendation is to pair students so they have the real-world experience of planning and working with others. The recommendation is to heterogeneous pairing in terms of Scratch skills. That said, students trios can be used on class size.

**Understanding the Problem**

|  |  |
| --- | --- |
| **Teacher** | **Student** |
| Review of BleepBlorp Requirements | Ask clarifying questions |

1. Review BleepBlorp requirements
2. Review suggestions for both online and offline tasks

**Exploring the Problem**

|  |  |
| --- | --- |
| **Teacher** | **Student** |
| Support students as needed. Give feedback as needed. | Work on creating the Scratch game and off-line task for the Multitasking Project. |

1. Release students to create..

**Accommodations:** N/A

**Extensions:** N/A

**Assessment:**

Exit Ticket:

Standard: Finish the Multitasking Planning Sheet

**References/Resources:**

N/A