Basic Introduction to computer science using Alice and Looking Glass

Background knowledge:
Must know how to upload files and folders to Google Drive
Must know how to create folders in Google Drive
Must know how to share documents/folders in Google Drive

Preparation:
Know how to access everything you are going to show the students.
Be confident, but prepared to learn from the students more than you prepare.

Basic lessons for teaching one class every two weeks for Forty minutes
Because I don’t grade the students will need an incentive to do the work:

- Possibilities:
  - Put winning entries on lobby signage
  - Ask for free homework passes from teachers
  - Other reward from HR teachers

Lesson 1: Understand the basics of Looking Glass (two periods)
Objectives: Students will understand layout of Looking Glass Screen
Tasks:
1. Students will demonstrate how to manipulate cameras
2. Students will demonstrate how to import and manipulate objects
3. Students will demonstrate how to add Methods to multiple objects

Teacher Thoughts: about 10 to 15 minute lecture in front of white board and then go over again while they are on the program themselves

- Need to show students all pertinent parts of Looking Glass Glossary of terms on last 2 pages
  - World Window- Shows the world you are building
  - Object Tree (Drop Down List)- Contains a list of objects in the world
  - Details Area- Provides more information about the world or an object in the world
    - Actions- Blocks that tell the object what to do
    - Questions- Blocks that allow for more detailed programming (loops, while, and others)
    - Action Ordering Boxes- Blocks that tell your object how to follow instructions on actions
  - Editor Area (My Story)- Allows you to make objects in your world do new things like move and spin
    - Scene- It allows you to tell Looking Glass when to make objects do certain things
- Show how to choose an object and place in world (edit scene)
  - Gallery- where objects are chosen
    - click- object appears in starting area
    - click and drag- object appears where it is placed
  - place object properly with:
    - default
    - rotation
    - translation (leave this selected to use when adding to editor area)
    - resize
- Show how to make an object move, speak, think
  - no parts of object in LG object tree
- Show how to move view around by using arrows at bottom of screen or use different views drop down
Lesson 2: Create a world using Looking Glass (2 periods)
Objective: Students will demonstrate an understanding of basic Looking Glass Usage
Tasks:
1. Choose three objects and line them up to be straight across
2. Have the camera complete a square around the objects and end up where it began and facing the objects
3. Have the three objects interact by speaking and moving
4. Have a scene change (Think camera drops then have camera go to a drop point)

Lesson 3: Understand basics of Alice (2 to 3 periods)
Objectives: Students will understand layout of Alice screen
Tasks:
1. Students will demonstrate how to drop cameras
2. Students will demonstrate how to import and manipulate objects
3. Students will demonstrate how to add Methods to multiple objects

Teacher Thoughts:
● Need to show students all pertinent parts of Alice
  ○ Dialogue Box at program start
    ■ Tutorial
    ■ Recent Worlds
    ■ Templates
    ■ Examples
    ■ Open a World
  ○ World Window- Shows the world you are building
  ○ Object Tree- It contains a list of objects in the world
  ○ Details Area- It provides more information about the world or an object in the world
    ■ Properties- Default settings for object
    ■ Methods- Actions the object can do
    ■ Functions- More actions the object can do but typically involve detailed directions
  ○ Editor Area- It allows you to make objects in your world do new things like move and spin
    ■ Tabs on bottom (Do not need specifics but students are curious so tell them what these tabs mean) Glossary of terms on page 7
    ● do in order- Group directions to do in order
    ● do together- Group directions to do together
    ● If/else- Command set (if this happens, then do this, if not, do this)
    ● Loop- Do a specific command(s) for a set amount
    ● While- Do a specific command(s) during another action
    ● For all in order- Create a list for Alice to use in order
    ● For all together- Create a list for Alice to use all together
    ● Wait - All action in the world pauses for a moment
    ● Print- Print the Editor area
    ● Comments (//)- area where programmer leaves notes, does not affect order of instructions
- **Event Area**—It allows you to tell Alice when to make objects do certain things
  - Show how to choose an object and place in world (edit scene)
    - Gallery—where objects are chosen
      - click-object appears in starting area
      - click and drag-object appears where it is placed
    - place objects properly with:
      - **Move objects freely**—ability to move objects left, right, backward and forward
      - **Move objects up and down**—ability to move objects up or down only
      - **Turn objects left and right**—ability to “spin” or “turn” objects in place to left or right
      - **Turn objects forward and backward**—ability to “spin” or “turn” objects in place forward or backward
      - **Tumble objects**—ability to move objects, in place, left, right, forward and backward
      - **Resize objects**—ability to make objects smaller or larger
      - **Copy objects**—ability to copy objects in world just by clicking mouse
  - Difference between single view and quad view
- Show how to make an object move, speak, think
  - breakdown of object parts in object tree
- Show how to move view around by using arrows at bottom of screen or use different views drop down
  - drop tripods to create scenes.
  - when dropping cameras make sure you select the first drop before going back to create world

**Lesson 4:** Create a world in Alice (2 to 3 periods)

**Objectives:** Students will demonstrate an understanding of basic Alice usage

**Tasks:**
1. Choose three objects and line them up to be straight across
2. Have the camera complete a square around the objects and end up where it began and facing the objects
   a. dummy drops in Alice (rename)
   b. align straight on in Alice (if needed)
3. Have the three objects interact by speaking and moving
4. Have a scene change (Think camera drops then have camera move to a drop point)

**Lesson 5-8:** Create a short animation that has a point. (movie trailer, advertisement, project for class, etc., etc.) (4 to 8 periods)

**Objective:** Using the program of your choice (Alice or Looking Glass) create a short animation, (30 secs to one minute), of either your favorite movie trailer, an advertisement or even a project for your core curriculum.

- must have object movement
- must have thought bubbles or speech
- must have camera movements and or placements
- be chosen to feature on signage in front lobby

**Tasks:**
1. create a short animation using the tools on your chosen program
   a. camera placement and or movements
   b. object movement
   c. speech and thought bubbles
2. When complete do the following:
   a. name file as your name (first name and last initial) and class (Josh M.-Miller)
   b. export as video and save as your name and class (Alice users only)
c. upload and share the video and file with me via Google Drive.