

ALGEBRA II MATH MATTERS
Mathematics of Pixar Animation
30 pts.

1. Google “Pixar in a Box” and select the choice labeled “Partner Content Khan Academy.”
2. Select the topic titled “Environment Modeling.” In the left sidebar, click Start Here.
3. Complete the Modeling grass with parabolas lesson. Put answers to all boldfaced items in a Word document with your name and block number in the top right corner.

Screen Shot Cmd-Shift-4 Draw box around area

Lesson 1: Modeling grass with parabolas

Watch the video “Introduction to Parabolic Arcs.”

Question 1: What do blades of grass have to do with parabolic arcs?

1. String Art—rves from straight lines.

Create your own String Art design. Take a **screen shot (1)** of it, place it in your Word document. Set the Text Wrap to Tight and Resize the image to a smaller size if needed.

2. Midpoint Formula—Watch the Midpoint Formula Video and do some of the practice problems.

Question 2: What is an easier way to remember how to find a midpoint rather than memorizing the formula? (*We discussed it in class.*)

3. Parabolic Arcs—Watch the Parabolic Arcs video and then do the Parabolic Arc exercise. (If the entire graph is not visible, use the scroll bar at the bottom of the graph to bring it into view.)

Screen shot (2, 3, 4) THREE of the arcs you complete. Add them to your Word document, text wrap, and resize them to fit side by side.

4. Modeling Grass—Watch the Modeling Grass Video, and then complete the Design Challenge. You must change the number of strings, width, and color. Your blade of grass should NOT be identical to that of another student.

Screen shot (5) your blade of grass. Be sure to include the control box in the screen shot. Add it to you Word document, text wrap, and resize it. Make it approximately 3” square.

5. Animating Grass—Watch the Animating Grass video.

Questions:

- 3) What is modeling?
- 4) What is shading?
- 5) What is the term for subtle motion in an animation and why is it needed?
- 6) How is each blade of grass made to move at a different time?

Use video capture to record 10-15 seconds of your waving grass. Email or share the video with Mrs. Meyer.

When completed: 6 questions answered, 5 screen shots, and 1 video capture.

Video Capture

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| 1) Launch QuickTime App
2) Select File—New
... Screen Recording
3) Fit box around animation.
4) Select “Record Selected Portion” Button.
5) Click Record.
6) Stop recording in top menu bar.. |
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