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Alice 3D Lesson Plans

Overview:
Given direct instruction, students will develop Alice 3D activities that develop higher order thinking skills through Blooms Taxonomy (knowledge, comprehension, application, analyze, synthesize, evaluate) with a 85% (level 3) of mastery. This program will/can be used in technology, reading, science, character education, etc.

Objective: Students will be introduced to Alice. The teacher will introduce Alice by students viewing the Carousel and the steps to develop the concept. (Develop a vocabulary according to the needs of the class, consider computer knowledge and skills.) Anticipate questions students may ask and admit if you do not know the answer to a question. This is an opportunity to research (interdisciplinary skill) the answer by using the Alice text, Internet, handouts given during training and all available sources.

North Carolina Standard Course of Study: http://www.ncpublicschoolsof.org/curriculum

Computer/Technology Skills Competency Goals Grades 6-8

***See web site for goals applicable to lesson.

Science Competency Goals Grades 6-8

1 – The learner will design and conduct investigations to demonstrate an understanding of scientific inquiry.

2 -The learner will demonstrate an understanding of technological design.

Competency Goals Grade 6

Competency Goal 5 – The learner will build an understanding of the solar system.

5.01 Analyze the components and cycles of the solar system.
5.02 Compare and contrast Earth to other planets in the terms of ________.

5.03 Relate the influence of the sun and the moon's orbit to the gravitational effects produced on Earth.

5.04 Describe space explorations and the understanding gained from them including: ____________.

5.05 Describe the setting of the solar system in the universe including: ___.

5.06 Analyze the spin-off benefits generated by space exploration technology including: ________.

Science Competency Goals Grade 7

Competency Goal 7 – The learner will conduct investigations, use models, simulations, appropriate technologies and informations systems to build an understanding of motion and forces.

6.03 Evaluate Newton's Laws

6.04 Analyze that an objects motion is always judged relative to some other object or point.

6.05 Describe and measure quantities that characterize moving objects and their interactions within a system.

English Language Arts Competency Goal Grades 6-8

6 – The learner will apply conventions of grammar and language usage.

Mathematics Competency Goals Grades 6-8

***See web site for goals applicable to lesson.

National Science Education Standards

http://www.nap.edu/readingroom/books/nSES

National Science Education and Teaching Standards (NSTA)

http://www.nsta.org/publications.aspx
National Science Standards Matrix
http://www.ucmp.berkley.edu/fosrec/Matrix.html

Materials:

1. Computer/s
2. Teacher developed Alice 3D activity.
3. Text: Learning to Program with Alice
4. Storyboarding sheets
5. Pencils

Lesson 1 - Character Education

World: Carousel

Teacher Questions:

1. Who knows the names of animated movies?
2. What are the names of your favorite science fiction movies?
3. What are you favorite video games?
4. What makes the characters move?

Teacher Explains:

1. Steps are needed to produce actions.
2. Reading skills are important.
3. Following instructions are necessary.
4. You (student/s) are the creator.
5. Explain story boarding. Why it is important.
6. Brainstorming ideas. Give each student a sheet/s for storyboarding. (It is important for students to think about what they want to create. This can be done individually or in groups.)
Student Views:

1. Carousel moving.
2. Light (moving as a shadow, dark to light).
3. A lady facing the carousel.
4. Rides moving up and down,
5. Hear a voice singing.
6. Students view the steps to make actions.

Closure:

1. Review what was seen and discussed during the lesson.
2. This can be omitted if the anticipated outcome has been met by student participation through observation, questioning, discussion, etc.

Notes:

1. If this lesson will be used to teach a character education lesson, interject the necessary information appropriate to age, grade level, maturity and need.
2. This lesson can be used to introduce Alice 3D with the appropriate steps taken to guide/facilitate the learning of techniques used to design worlds.
3. Remember discourse community is imperative in any lesson.

Lesson 2 – Writing

World: White Stuff

Review Lesson 1

Inquiry:

1. Question students on what they saw in lesson 1.
2. What impressed them as they viewed lesson 1.
3. What would you add to the world “Carousel.”

Teacher:

1. Introduce the world “White Stuff”.
2. After viewing the world give the writing instructions.
3. Things to consider:
   a. Writing mode.
   b. Number of paragraphs
   c. Students ability.
   d. Available resources: dictionaries, work in groups, individual work, etc.
   e. Post students writings.

Grading: A rubric is suggested by not mandatory.

Lesson 3 – Science

World: Planet with a View

Review: Lessons 1 and 2

Objective: Given the grade level text, media resources, Alice world “On Top of the World”, students will be able to envision/observe the possible view of the Milky Way from the Orion System and design the solar system with 90% accuracy from a given angle.

Time: As needed.

Procedure:
1. Teacher will establish prior knowledge of the Milky Way during a question and answer session.

*See Curious about Astronomy? Ask an Astronomer.

http://curious.astro.cornell.edu/planets.php#questions

2. A KWL Chart is used to organize students answers.

The chart should be posted in the classroom for viewing. If possible students may have a KWL Chart to state information. Students may have personal folders.

<table>
<thead>
<tr>
<th>What do I/we know about the solar system and constellations?</th>
<th>What do I/we want to know about the solar system and constellations?</th>
<th>What do I/we want to learn about the solar system and constellations?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***The KWL Chart can be revised at the end of the lesson to reflect what they have learned or did they surpass what they have learned.

<table>
<thead>
<tr>
<th>What did I/we learn about the solar system?</th>
<th>What did I/we about constellations?</th>
<th>What did I/we learn about designing solar system using Alice?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
<td>2.</td>
</tr>
</tbody>
</table>

3. Teacher will introduce Alice “Planet with a View.”

4. Teacher will adjust the speed of the world as need to establish a space view.

5. Students will be be given storyboarding sheets to establish their plan for designing the Milky Way from the point of the Orion constellation.

6. Have posted facts about the planets, stars, etc.

7. Other things to make the room as a solar system, etc.

Lesson:

1. Students can work individually or in groups according to the needs of the individual student.
2. For students to help decide what they want to learn provide options and rules. This is a student centered lesson but be flexible.

3. Students will need resources to find information. Please consider the majority of the work being done in class.

4. If you have one or several computers in your classroom students can participate in designing the solar system Alice world. In any situation Alice can be used.
   a. The teacher can compile student information/design as they watch for input.
   b. For the classroom with several computers students can be in groups to design a world.

Assessment:

1. This can be done by power point, research papers, maps, designs, etc.

2. A rubric can be used to assess a grade/points.

3. Various methods of gathering grades gives each student a way to succeed.