

Teacher Guide for ODYSSEY

January 2010: Is It Art or Science

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INTRODUCTION: Show students some paintings, sculptures, rock formations, and pictures of trees. Ask them if these are art or science. Ask what their reasons are for their choice. Ask if they could be both art and science, and why or why not?

WHOLE CLASS ASSIGNMENT:

Have the students read the articles:

- Zubbles! (p.2)
- What Would You Do...(p.2)
- It's a T-Shirt! No, It's a Camera! (p.3)
- Monkey Discovery (p.3)
- Prize Winning Art...by Scientists. (p.7-9)
- Put Processing to Work (p.21)
- Calling Indian Jones (p.31)
- Comic Relief...In Science (p.38-39)
- Making a Morphs (p.43)
- Don't Worry about Winter (p.44-45)
- Ask Dr. Cy Borg: Talking to Yourself (p.47)
- Camouflage Champs of the Sea (p.49)

AFTER reading the articles have students pick 5 of the articles. Write 3 to 5 facts learned from each article. Have them pick one article from their five and create an acrostic poem about the article using the facts they selected. Illustrate, then decide if their illustration is art, science, or both. Explain why.

Acrostic example:

Zubbles

Upset the
Basic color make-up of
Bubbles by
Letting them
Explode in
Shades of pink or blue!

DIVIDE students into groups of 2 or 3 students. Have them read an assigned article and use the questions to guide their group discussion. Have students create a presentation with a visual (e.g. chart, poster, graph, power point, work of art or science) to explain the information from their articles. Make presentation to class.

E-Harmony: Science and Art (p.4-6)

1. Why do scientists who study nature often miss the beauty of it?
2. Why, when the scientists do see the beauty of nature, does it raise some interesting questions?
3. What is the author's belief about computers now?
4. Explain how the computation has affected science, art, photography, and sculptures.
5. Research a picture showing science data that to you is a piece of art. Explain your reasoning for your choice.

PLOrk: A Different Kind of Orchestra (p.10,12,14)

1. What is PLOrk?
2. What type of computer do they use?
3. How does Cook work on creating the music?
4. Explain how a laptop instrument (meta-instrument) work?
5. Describe the student musicians.
6. What is a PLOrk concert like?
7. What is one of the most important ideas of the laptop orchestra?
8. What are the three crucial factors that play into the design process? Describe them.
9. Why is communication among the performers crucial?
10. What is the best way to describe PLOrk?
11. What is the real power of PLOrk?

1,2,3...Strike Up the Cell Phones! (p.11,13,14)

1. What is a telesymphony?
2. What did Golan Levin set out to create?
3. How did Levin describe his innovative concert?
4. Describe Dialtones.
5. Describe the sounds of cell phones nine years ago/
6. How did they make a group of random cellular phones work?
7. How did they solve problem cell phones that wouldn't receive their ringtones?
8. What was the effect?
9. What are the sounds of Dialtones like?
10. Listen at <http://www.flong.com/projects/telesymphony>
11. Describe the different kind of symphony in 2009.
12. Listen to it at <http://www.theworld.org/tag/linda-blake>

ARS Electronica: A Tantalizing Technological Tour (15-17)

1. What does electronica mean?
2. What did the yearly feast celebrate?
3. Describe Robot Clones, Plastic Cyclone, Plantimals, Drink, Pee, Drink, Pee, and Bare Electricity.
4. Pick which ARS Electronica exhibit sounds like the most fun and explain why.

Ben Fry: Data Becomes Art (p.18-20)

1. Look at <http://benfry.com/humanvschimps/>
2. What does Ben Fry's data visualization highlight?
3. What does humans FOXP2 do?
4. What does Ben Fry's work in data visualization let viewers see?
5. What is his goal?

6. Read the following sections of the article: "Decoding DNA", "Valence", and "Data and Design". Explain each and look at websites related to each.
7. Because of the new art of data visualization, what now can even non-scientists see?

Andy Goldsworthy Sculpting Earth Art: What to be an Earth Artist? Get Ready to Get Dirty. (p.22-28)

1. What is Goldsworthy's simple rule?
2. What is his purpose?
3. Describe art projects he has done. What were his results?
4. Using leaves and straight pins, can you create a leaf box?
5. Using rocks (sizes that can fit on desk or floor), can you build a sculpture similar to the one on page 25?

Staghorn Beetles to Crash Bags: The Origami of Robert Lang (p26-29)

1. What is origami?
2. What makes origami so frustrating?
3. What is his advice?
4. How is origami more than child's play?
5. Make a piece of origami. Use Tricky Triangles (p.30) or <http://wwworigami-usa.org/diagrams>

The Art of Finding Genghis Khan (p.32-33)

1. What you see in a painting on a gallery wall depend on what?
2. What do scientists at CISA3 use to study art?
3. What is this process called?
4. Explain how this works and what it shows.
5. How can CISA3's high tech analysis be invaluable to art historians and curators?
6. What is the future vision for the use of this technology?
7. Discuss the 3 different cutting-edge sciences used and what each one showed.

The CIA Wants You: The Science and Art of Food Preparation (p.34-37)

1. What does CIA stand for?
2. What do students learn here?
3. What does Chef Turcotti describe cooking as?
4. Why does chemistry play a part in cooking?
5. Explain the process of whipping egg whites.
6. Why is having an awareness of gravity important?
7. Why must they think like artists?
8. What can keep a cake from rising?
9. What can the anti-griddle do?

Picture this! (P.40-42)

1. What is behind "Picturing to Learn"?
2. What did Frankel notice when she asked a researcher about his/her work?

3. What does "Picturing to Learn" ask students to do?
4. What is the "catch" to this?
5. Why does the student have to draw the concept for the purpose of explaining?
6. Explain why it is a great tool for teachers in the classroom.
7. What are limitations to using *anthropomorphic* characters to represent scientific components?
8. Do the "Picturing to Learn" contest on page 42