

Is There Water on Zork?

Crash Landing Script:

Materials: costumes, capes, clipboards for scripts, tinfoil earphones, alien costume

CO-CAPTAIN: I'd once again like to welcome you aboard the starship Bluearth. We are pleased to have Earth's esteemed scientists and linguists on our journey to the Planet Zork. As you know upon our arrival on Zork we will be greeted by Zorkian scientists who look forward to giving us a beamed tour of their planet with time for investigations. Enjoy your journey and I will go and prepare for landing on Zork.

CAPTAIN: Lieutenant _____, please give me a reading from the Interstellar shielding device and let me know the clearance for Bluearth.

1st Lt.: Yes Captain we are currently experiencing debris at a 60 degree radial belt and we are not shielded as yet.

CAPTAIN: I will ask Co-Captain _____ to prepare the crew for a difficult landing. Captain _____, please prepare the crew for a possible collision field landing.

CO-CAPTAIN: Crew, I am to report that we have encountered debris at 60 degrees that can hit our starship and you must immediately prepare for a crash landing. Assume your 70 degree lean and encapsulate. Clear all space around you and encapsulate without delay. We will have emergency survival supplies sent to the encapsulation but you must encapsulate now. Thank you and best of luck to each of you as we descend.

CAPTAIN: Captain _____, is the crew prepared for a collision landing?

CO-CAPTAIN: The crew is prepared and encapsulated.

Crew now bounces around and struggles to keep the ship under control and crash lands. (fall off your chair etc.)

CAPTAIN: Lieutenant _____, please give me the ship damage report.

1st Lt.: There has been damage on the forward seal and unfortunately to our water supply. We will only have enough water for the next 6 hours.

CAPTAIN: Captain _____ please check injuries and bring the crew out of encapsulation. Then let the crew know the extent of damage to our water supply. (6 hour supply) We will be greeted by Zorkian Ambassadors shortly and they do know English but not the words clear, liquid, and water. We must find water on Zork! Have the scientists and linguists work together in teams and come up with a description of water not using clear, liquid, and water.

CO-CAPTAIN: Please resume travel positions and I need to ask if anyone is injured at this time. The medic will be making rounds and you have your survival floats that should have dropped in case of injury. We have had damage to the ships seal and our water supply is down to 6 hours. We need your help at this time. An entourage of Zorkians is approaching and we will need to ask them to get water to us. They do speak English but do not know the words clear, liquid, and water. Therefore in your teams, we will need for you to come up with a description to give the Zorkians so that they can find water on the Planet Zork. We must do this in the next few hours or face dehydration. Thank you for your help in this matter.

Teams give the Zorkian their descriptions of water.

Zorkian can ask various questions of the scientists to help them think about their descriptions such as:

What does it feel like?

What is it used for?

Why do you need it?

Zorkian: I shall return with what you have asked of me. *Z bows and exits.*

Hand out the liquids to each team with testing materials and testing charts.

Science Process Skills

Observing - using only 4 of your 5 senses (see, hear, smell, feel, DO NOT TASTE the liquids)
gather information about the clear liquids

Inferring - make an "educated guess" about which clear liquid is water. Think about what you already know about water.

Measuring - use an eye dropper to place a droplet of water on wax paper, observe and infer which droplet is water

Communicating - discuss the measured droplets, observe and make inferences to determine which liquid is water.

Classifying - use the graphic organizer data table to answer the questions about the clear liquids.

Predicting - using the data chart and what you already have learned, predict (guess) which clear liquid is water.

Formulating hypotheses -
explain how your group arrived
at your hypotheses (answer) of
which liquid is water.

Interpreting data - be recording data from the experiment in the graphic organizer data table and decide which clear liquid is actually water.

Experimenting - experiment on the clear liquids to determine which one is water, use your senses, what you already know, what you learned, and your table of data to decide which liquid is really the water.

Is There Water on Zork? Which Liquid is Water?

Scientists _____

<u>Question</u> Write what you know or find out.	Liquid 1	Liquid 2	Liquid 3	Liquid 4	Liquid 5	Liquid 6	Liquid 7
Does it have a smell?							
Does it have a color?							
What happens if you put a dropper full on wax paper?							

Does it absorb into a paper towel?							
What does it feel like?							
Will it make a sound if you gently move the cup back and forth?							
Could this be water?							

“Is There water on Zork?”

Science Process Skills

QCC's:

2.1 *Science Inquiry, Process Skills and Problem Solving*

2.3 *Safety*

2.4 *Tools*

Essential Questions:

1. What are the process skills scientist use and why should they use them?
2. What makes you a scientist?

Materials: cups, various clear liquids (water, vinegar, corn syrup, shampoo, hand sanitizer, Sprite, baby oil), paper towels, wax paper, plates, eye droppers, word splash, graphic organizer, capes, clipboards, tinfoil earphones, alien costume

Science Process Skills: (teacher info)

Observing - using the senses to gather information about an object or event. Students will observe, describe and note the attributes of clear liquids.

Inferring - making an "educated guess" about an object or event based on previously gathered data or information. Students will infer which clear liquid is water.

Measuring - using both standard and nonstandard measures and estimates to describe the dimensions of an object or event. Students will use eye droppers to infer which droplet of clear liquid is water.

Communicating - using words or graphic symbols to describe an action, object or event. Students will discuss the measured droplets, observations and inferences of what they already know about water to determine which liquid is water.

Classifying - grouping or ordering objects or events into categories based on properties or criteria. Students will use a graphic organizer to categorize the attributes of the clear liquids.

Predicting - stating the outcome of a future event based on a pattern of evidence. Students will predict which clear liquid is water.

Formulating hypotheses - stating the expected outcome of an experiment. Students will explain how they arrived at their hypotheses of which liquid is water.

Interpreting data - organizing data and drawing conclusions from it. Students will be recording data from the experiment in a data table and forming a conclusion about which clear liquid is actually water.

Experimenting - being able to conduct an experiment, including asking an appropriate question, stating a hypothesis, identifying and controlling variables, operationally defining those variables, designing a "fair" experiment, conducting the experiment, and interpreting the results of the experiment. Students will be experimenting on clear liquids to determine which one is water.

*** Have the desks set up into 4 groups. Have each of the 7 liquid cups labeled 1-7 and filled. Make yourself a key of what is in each cup. Have all the supplies ready before going to the commons area for the skit.

Explain to the students that you are going on an Intergalactic journey to Zork, they must be on their best behavior to avoid trouble with the aliens on the Planet Zork. Go to the commons. Have the students sit on the floor criss/cross apple sauce.

Put on your tinfoil earphones and capes. Sue-you are going to be the alien-slip out when the kids don't notice. Put on your costume.

***1. Captain Boyle 2. Navigator Webb 3. Medic Farr 4. Emergency Coordinator Creighton
5. Safety Officer Turner 6. Life Support Specialist Hearn

Captain Boyle: I'd like to welcome you aboard the Starship BlueEarth 2. We are pleased to have all you esteemed scientists with us on our journey to the Planet Zork. Let me introduce you to our crew: (*Sonya-walk through all the kids waving a wand or something over them-this is your health check*) Navigator Webb, Medic Farr, Emergency Coordinator Creighton, Safety Officer Turner, and our Life Support Specialist Hearn. Navigator Webb are we ready for lift off? (*Cindy be pushing the pretend buttons you draw on the white board*) (*Everyone else decide on what you want to do in way of getting ready—look busy*)

Navigator Webb: Aye, Aye Captain Boyle, I am putting the coordinates into the system and we should have a safe journey to Planet Zork.

Medic Farr: Captain Boyle the crew and passengers have all been checked for disease and are all healthy and ready to go.

E.C. Creighton: Captain Boyle the Starship BlueEarth's emergency systems are clear, enabled and ready for lift off.

S.O Turner: Captain Boyle the encapsulation shields are all in proper working order in case of meteor shower activity.

L.S.S. Hearn: Captain Boyle we have enough of the life sustaining water to last throughout our journey. The tanks are completely full and functional.

Boyle: Good, Good, enjoy your journey and I will go and prepare for our landing on Zork.

Webb: (Push buttons) Emergency Coordinator Creighton! I am spotting an asteroid field straight ahead, with incoming meteors-prepare the crew and passengers for encapsulation!

Creighton: Safety Officer Turner-get the passengers ready while I shield the Starship BlueEarth 2.

Turner: Stay calm scientists; pull your encapsulation shields over your entire body, lean to the left and clap your hands three times to activate the shield. Hold on and get ready for a bumpy ride.

(We all start shaking)

Farr: We made it through, scientists is everyone ok? (Walk through with your stick-wave it over anyone who says they are hurt) Captain Boyle-the crew and passengers are all safe and healthy.

Boyle: Life Support Specialist Hearn-how is our tank of life supporting water?

Hearn: Captain Boyle the reading I am getting from the computer states we only have 6 hours left of water. At this rate we will not be able to get back to Earth safely.

Boyle: Navigator Webb, are we almost to Zork?

Webb: Yes Captain Boyle, Emergency Coordinator Creighton can prepare for landing.

Boyle: Safety Officer Turner please allow the passengers to remove their encapsulation shields and prepare them for landing.

Boyle: Life Support Specialist Hearn, please prepare a statement for the Zorkian Ambassador about our need for water.

Webb: We are prepared for landing. Everyone hold on.

Creighton: I see the Zorkian Ambassador waiting. Everyone please wave so he knows we are friendly.

(In comes Sue)

Boyle: Welcome Ambassador Zork! We have had an emergency. Emergency Coordinator Creighton will explain.

Creighton: We had a problem with the shields of the Starship BlueEarth 2 and a hole has been made in the tank of our life supporting water unit.

Farr: We have only 6 hours left to make it, then we will all start to dehydrate and eventually die. Our crew and passengers must have water to survive.

Turner: My team has repaired the hole, yet we lost a lot of our precious water supply. If we can refill the tank we will be able to safely get back to Earth.

Sue: Tell me what this water is? Maybe we have some on the Planet Zork.

Hearn: Quick everyone turn to your partner and describe water, talk for a few moments and decide how we can explain it to the Ambassador Zork.

Turner: The scientists are getting restless Captain Boyle-Ambassador Zork may become insulted-I fear for our safety.

Sue: Have you arrived at an explanation of what is this thing you called water?

Hearn: Yes, Ambassador Zork-(ask for hands-get the kids to say what they think it is)

Sue: I believe my planet may have some of this thing you call water. We have 7 things that are as you described. I will allow you to use some of my laboratories to test these things. I hope you will be successful. We do not have room on Planet Zork for all of you earthlings to stay.

Boyle: Scientists-follow your crew member back to the lab and prepare for experimentation, we will meet back here in the Starship BlueEarth 2 shortly. I hope we are successful!

Everyone go back to class-we need to get someone else to put on the mask so Ambassador Zork can walk from room to room.

Do the experiments, talk about the results, when you determine if any of the groups had correctly chosen the right liquid, talk about the procedures they just used-see poster-attached.

When we are all ready we can go back to commons and pretend to go back to Earth. We can set a time or call room to room.

Boyle: I hope we were successful in finding some water. Navigator Webb did your team of scientists find water?

Webb:

Boyle: Safety Officer Turner did your group find water?

Turner:

Boyle: Medic Farr did your group find success?

Farr:

Boyle: Life Support Specialist Hearn did your scientists find water?

Hearn:

Boyle: Emergency Coordinator Creighton did your group determine which liquid was water?

Creighton:

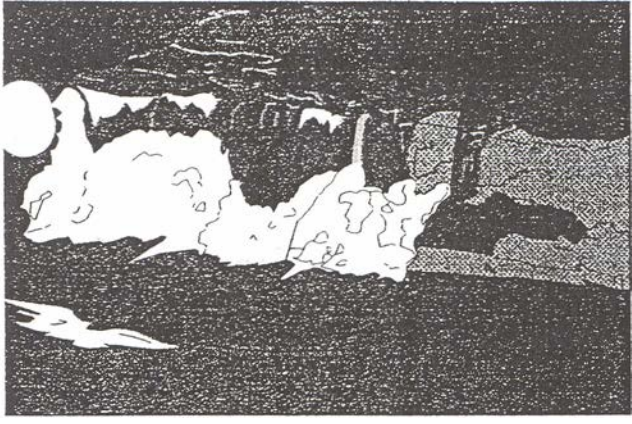
Turner: Captain Boyle we can safely refill the tanks!

Hearn: We will have enough life giving water to make it to Earth!

Farr: We will all stay healthy!

Webb: Captain we are ready for take off, all systems are on target for Earth.

THE END!!!!!!



Is there water on Zork?

Questions to Consider:

1. What is the question we are trying to answer?
2. What do we know that is related to this question (form hypothesis)?
3. What are the procedures to answer the question?
4. What are the results of the investigations?
5. What conclusions can we draw?
6. What is the value of these conclusions (Can they be used to answer the question)