

**ITQ ARTS AND SCIENCE INTEGRATION
GRADE 5
THEATRE AND PHYSICAL SCIENCE**

**Improvisation - Using Theatre to Create Meaning
“Mixtures and Solutions,” Investigations 1
LESSON # 1**

CONTENT STANDARDS

Theatre

- 1.1 Use the vocabulary of theatre, such as sense memory, script, cue, monologue, dialogue, protagonist, and antagonist, to describe theatrical experiences.
- 2.1 Participate in improvisational activities to explore complex ideas and universal themes in literature and life.
- 2.3 Collaborate as an actor, director, scriptwriter or technical artist in creating formal or informal theatrical performances.
- 5.2 Identify the roles and responsibilities of performing and technical artists in theatre, film, television, and electronic media.
- 5.4 Use theatrical skills to dramatize events and concepts from other curriculum areas, such as reenacting the signing of the Declaration of Independence in history-social science.

Physical Science

- PS1B** Students know all matter is made of atoms, which may combine to form molecules.
- PS1g** Students know properties of solid, liquid, and gaseous substances, such as sugar, water, helium, oxygen, nitrogen and carbon dioxide.
- I&E6c** Plan and conduct a simple investigation based on a student developed question and write instructions others can follow to carry out the procedure.

ESSENTIAL QUESTIONS (*Questions students might ask about the topic*)

- What tools do actors use to show “character” to an audience?
- What are the different parts of a story?
- What is improvisation?
- How can theatre be used to tell stories from science?
- What is the difference between a mixture and a solution?
- What is the difference between a solute and a solvent?

OBJECTIVES & STUDENT OUTCOMES (*Students will be able to.....*)

- create character through gesture, posture and vocal expression.
- identify elements of plot in a short improvisation.
- use improvisation to create a short script about a scientific concept.
- practice skills of an actor and playwright.
- demonstrate both monologue and dialogue.
- articulate the difference between a mixture and a solution, and a solute and a solvent.
- use character to convey the physical properties of certain solid, liquid and gases.

ASSESSMENT (*Various strategies to evaluate effectiveness of instruction and student learning*)

- **Feedback for Teacher**
 - “Storytelling Planning Worksheet” (included)
 - Scene observation
 - Video
- **Feedback for Student**
 - Teacher/Peer Comments
 - Video

WORDS TO KNOW

Theatre Grade 5

- **climax:** The point of highest dramatic tension or a major turning point in the action.

- **complication:** The inciting incident that introduces the problem or conflict.
- **crisis:** A decisive point in the plot of a play on which the outcome of the remaining actions depends.
- **dialogue:** The conversation between actors on stage.
- **director:** The person who oversees the entire process of staging a production.
- **exposition:** Detailed information revealing the facts of a plot.
- **improvisation (improv):** A spontaneous style of theatre in which scenes are created without advance rehearsing or scripting.
- **monologue:** A long speech by a single actor.
- **playwright:** A person who writes a play.
- **resolution:** The ending where loose ends are wrapped up.
- **stage manager:** The director's liaison backstage during rehearsal and performance.

Science Grade 5

- **atom:** The smallest particle of an element. Atoms are the building blocks of matter.
- **matter:** Anything that has mass and takes up space.
- **mixture:** A substance containing two or more materials with different properties.
- **molecule:** The smallest part of a substance that is made up of two or more atoms.
- **solute:** A substance that dissolves in a solvent to form a solution.
- **solution:** A special mixture formed when one or more materials dissolves in another.
- **solvent:** A substance that dissolves a solute to form a solution.

MATERIALS

- Video camera

RESOURCES

- VAPA Core Learnings: <http://www.sandi.net/204510720114515653/site/default.asp>
- *FOSS Kit Grade 5*, "Mixtures and Solutions," Investigations 1, 2 and 3
- Online improvisation lesson videos: http://www.ehow.com/video_4949233_improv-yes-lets.html
- *Theatre Games for the Classroom*, Viola Spolin (available on Google Books at <http://tinyurl.com/spolinbook>)

PREPARATION

- Review video of "Yes, Let's!" game at http://www.ehow.com/video_4949233_improv-yes-lets.html.
- Review Investigation 1 in *FOSS Kit Grade 5*, "Mixtures and Solutions."
- Optional actor's warm-up for use any time a theatre lesson is being taught.
 - Review with students that **actors** have three tools/instruments to do their work: voice, body and imagination.
 - Each time an **actor** works they must tune up their instrument.
 - Arrange students in a circle, each one having personal space.
 - Together lead students through a physical warm up isolating different parts of the body and stretching. (rotate hands at wrist, roll shoulders backwards and forwards, rotate head at neck, gently swing hips from side to side, knee bends, rotate foot at ankle, lunges, stretching on tippy toes, hanging like a rag doll, slowly rolling up, shake each limb vigorously 8 times, then 4 times, then 2 times, then once)
- Lead students through a vocal warm up with yawning, humming up and down the scale, breath exercises expelling air with force from the diaphragm, loud and soft voice, and tongue twisters. ("Put the Solute in the Solvent and You Mix a Solution", "Atoms Matter and Make Molecules", "Elements are Elemental", "Solid, Liquid, Gas", "Sally's Silly Solid is Sandy", "Goofy's Gas is Gaseous", "Lucinda Licks Up Liquid", "Adam's Atom", "Molecules Matter", "Triple Tested Test Tube", "Synthesize Hypothesize", "Olive's Observations Are Awful", "Percy Predicts Possible Problems").

WARM UP *(Engage students, access prior learning, review, hook or activity to focus the student for learning)*

(10 minutes)

- Review: Explain that actors have three tools to do their work: voice, body and imagination.
- We will be using all three to create a piece of theatre through **improvisation**.
- Introduce vocabulary word **improvisation**.
- Outline "rules" for **improvisation** (always say "yes" to your partner's idea and build on it, keep subject

matter school appropriate, no put down humor, potty language, references to drugs, etc.)

- Play “Yes, Let’s”
 - Leader calls out a location or activity, saying, “Let’s all go to the beach.” Or “Let’s all build a rocket ship.” Group replies in unison, “Yes, let’s!” Group then simultaneously **improvises** and **pantomimes** the activity or what they would do at specified location. Action continues until a new direction is called out building on the previous one. For example “Let’s all go swimming.” Or “Let’s blast off.” As group becomes familiar with the game, anyone may call out a new direction.
 - To see a video about this game visit: http://www.ehow.com/video_4949233_improv-yes-lets.html
 - Ideas for science-based suggestions may include; “Let’s all go to the lab.” “Let’s all do an experiment.” “Let’s all make a mixture.” “Let’s all make a solution.” “Let’s all separate the mixture.” “Let’s all evaporate the solution.” “Let’s all look at the crystals under the microscope.”
- This can work with re-enacting any of the investigations done in the FOSS kit. Allow students to remember and call out what they remember as the next steps they took in each experiment.

MODELING (*Presentation of new material, demonstration of the process, direct instruction*)

(20 minutes)

- Review with the students about **solute** and **solution**.
- Discuss the tools for creating a smaller **improvisation** or “**improv**” (character/relationship, setting, problem).
- Explain to students that an **improvisation**, like any piece of literature or theatre, is made up of different parts that form the beginning, middle and end. The beginning introduces the characters and the problem, the middle is where the characters try different things to solve the problem and the end is where the characters are successful or not and wrap up any loose ends.
- Ask for two student volunteers to create a short improvisation.
- Assign the students a character/relationship. (**solute/solvent**)
- Ask students to brainstorm what they know about **solutes** and **solvents**. Write responses on board. [A solute is a substance that dissolves in a solvent. A solvent is a substance in which a solute dissolves.]
- Review vocabulary.
- Have students discuss the characteristics of **solutes** and **solvents** and how they might show that in their bodies and faces when creating these characters.
- Use salt as the **solute** and water as the **solvent**.
- Chart for the students their responses to the characteristics of salt. [could include square crystal form, is a solid, used to flavor food, can cause dehydration or make you thirsty. Romans used to be paid in salt because it could be used to preserve food.]
- Use these and other ideas to create the character for the **improv**.
- Chart for the students their responses to the characteristics of water. [It is a liquid, fluid, strong enough to carve rock, can transform objects, is made up of hydrogen and oxygen. Necessary for survival.]
- Use these and other ideas to create a character for the **improv**.
- Assign the students a setting. (kitchen counter, refrigerator, playground, classroom, space, lab, etc.)
- Discuss what objects might be in this setting and how the characters might use them. Let students know that they will use pantomime skills to show the audience these objects without them actually being there.
- Assign the students a problem (e.g. the **solvent** wants to be part of something bigger and make a **solution**; the **solute** wants to be free of the **solid** form and have the fluidity of the **solvent**) or have students create a problem.
- Ask students to stand together frozen in a posture of each character. This is called a “tableau.”
- Give them a moment to think about the scene and then begin.
- Side coach them as necessary to show character, accept each other’s ideas and move toward finding a solution to the problem. Guide them through a beginning, middle and end.

GUIDED PRACTICE (*Application of knowledge, problem solving, corrective feedback*)

(10 minutes)

- Divide students into groups of three.
- Ask students to recall the experiment they did to separate the salt and water in the solution form. They will create the characters of salt, water and heat lamp.

- Ask students to brainstorm what they know about the characters they will be portraying and what they remember from investigation one. Focus on what their characteristics are, how students might show that with their bodies and faces and how the two characters might interact.
- Direct each group to come up with a location and problem related to the relationship. (The salt and water want to separate.) (Note: If time is limited or students are not ready to create a new **improvisation**, have them repeat the **improvisation** modeled in the previous section of this lesson.)
- Groups then stand frozen in a posture for the character they are portraying.
- Leader says “curtain” and all groups begin their **improvisations** at the same time.
- Leader calls out general side coaching.
- *Say: Accept your partner’s idea. Show your character with your body and face. Find an ending that solves the problem.*

DEBRIEF & REFLECT (*Identify problems encountered, ask and answer questions, discuss solutions and learning that took place. Did students meet outcomes?*)

(10 minutes)

- Bring group back together.
- Have a couple of groups demonstrate their improvisations.
- Ask students how the **actors** were successful at showing character with their bodies and voices.
- Students discuss what the problem was in their own **improvisation** and how they overcame it.
- Have students report on what science they remembered from their investigations and were able to include in their **improvisations**.

EXTENSION (*Expectations created by the teacher that encourage students to participate in further research, make connections, and apply understanding and skills previously learned to personal experiences.*)

- Discuss how to apply these same theatre skills to other subject areas such as social studies, math or Language Arts.