

NON-RENEWABLE RESOURCES

Lesson Title: Non-renewable Resources

Length: 60 minutes

Age Group: 5th Graders

Materials Needed: Picture of wind turbines and picture of solar powered car

Standards: Dance –

- 1: Identifying and demonstrating movement elements and skills in performing dance
- 3: Understanding dance as a way to create and communicate meaning
- 4: Applying and demonstrating critical and creative thinking skills in dance
- 6: Making connections between dance and healthful living
- 7: Making connections between dance and other disciplines

Standards: Science –

- 1D-Design Constraints: a – Realize that there is no perfect design and that usually some features have to be sacrificed to get others, for example, designs that are best in one respect (safety or ease of use) may be inferior in other ways (cost or appearance).
- 1D-Design Constraints: b – Identify factors that must be considered in any technological design-cost, safety, environmental impact, and what will happen if the solution fails.

Learning Objectives: Performance Tasks for this lesson:

The Student Will:

Cognitive

- Understand what non-renewable resources are
- Understand the uses for oil
- Understand the bell curve of oil production and its effects on the world Affective
- Follow directions

• Work as a team

- Cooperate and demonstrate good behavior Artistic
- Use locomotor, non locomotor, levels to depict the oil production bell curve

Assessment Criteria for this lesson (describe what the student's performance of this task will look like):

- KWL chart
- observations
- journaling
- overall pre/post test questions • We'll realize if the kids are not acting right and take the necessary steps to resolve it
- Ex: lights off and on, counting to three, raising hands, talking to teacher
- Observation • Peers will have to

Introduce the Lesson's Target Learning

How will you introduce your lesson's concept?

- Ask students what they think makes up a non-renewable resource, something that once used, cannot be replaced easily.
- Discuss fossil fuels, specifically oil, which comes from petroleum.
- What are different uses for oil? (gas, fuel, fertilizer, plastics, paint, detergent, make-up, synthetic rubbers/fibers)
- (5 minutes)

Why are you studying this?

Experts are predicting that within the next 100 years, the world will run out of oil, as humans have depleted the natural resource over time. It is important to know why this is. Also, 90% of the US's transportation relies on oil.

Integrated Activities:

Outline the steps/instructions that will take place for his activity from beginning to end:

Exploration Activity: (4 mins)

- Review dance terms: space, time, force, body movement
- Move desks away

Target Activity: (26 mins)

- Bell Curve Activity
- Discuss how oil production is represented on a graph in the shape of a bell
 - o There is little production at the beginning and end, and a lot in the middle (draw on board)
 - Have students use levels and pathways to show a bell curve (start low level, move in curved pathway, when at center of curve grow to high level, then back down to low level at the end of the arc. They should also start out slow, speed up, and then slow back down)
 - o This depicts the slow production at the beginning, the high production in the middle, and the slow production at the end

- Have students freeze and sit back down
- Oil Depletion Activity:
 - 90% of US transportation is dependent on oil.
 - o Unfortunately, the rate the oil is produced is not fast enough to accommodate the amount of oil that we need to keep transportation (and the other oil-required items) going
 - Have students pretend to be transportation of their choice
 - Tell them that at the beginning they have little oil because they are struggling to mine it out, so they should again be slow and at a low level.
 - Now we are reaching the peak of the bell curve, so oil is rolling in. You can be at a high level going quickly
 - But now we are running out of oil, so you need to slow down and sink back down.
 - We have completely run out of oil, so you are stationary. No more transportation left.

Culminating Activity: (10 mins)

- There are solutions to finding more oil, so that it doesn't run out as quickly (show pictures of each below as discussing them)
 - o Alaskan Pipeline – BUT it is harmful to the environment. It can harm animals and cause pollution
 - o BP Oil Disaster – By attempting to save money and speed up drilling, safety precautions weren't taken, and tons of oil spilt into the oceans causing lots of environmental damage and covering tons of animals in oil
 - o Fracking – Can make the drinking water in some places unsafe, and can cause such bad pollution that water can be lit on fire

Assessment: (15 mins)

- What is a non-renewable resource? What's wrong with using non-renewable resources (non-renewable resource is something that gets used up and can't be reused again. It's bad because it can't be recycled, so once it's gone, it's gone forever, so you can run out. They are also potentially damaging to the environment)
- Do you think it is worth harming the environment in order to delay running out of oil?
- Next time we will learn about potential alternatives to oil that won't be damaging to the environment called renewable resources.
- Write three things they learned in their journals

Alaskan Pipeline

BP Oil Spill

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Fracking – the gasses can mix with the well water, though, making the water harmful to drink