

Script for SEAI Pre-School 'Guzzler' Lesson

Background:

Time: 40 to 45 mins - Can also be done as individual activities over a number of days / weeks

Age Group: Pre-School 3-5

Curriculum links:

Aistear Theme	Pre-School Classes Learning Opportunities
Well being	Myself Plants and animals Caring for the environment
Identity and belonging	Awareness of the world I live in Responsibility to care for the environment
Exploring and thinking	Make theories Understand cause and effect Understand the process of change Build on children's natural curiosity Encourage children to test ideas Explore materials in the environment

- In the classes the unit 'Caring for my locality' is rooted in the child's awareness of the environment, the natural features and the habitats that these provide for plants and animals..
- In infant classes children should be introduced to, and be able to recognise, common materials such as food, metal, rocks, plastic, glass, wood, paper and textiles.

Resource: The below activities should be delivered with reference to '**Guzzlers Big Book on Energy**', these prompts are highlighted in the textboxes throughout the script. This book can be ordered free of charge by contacting schools@seai.ie. Posters are also available.

Props:

Straws, tape, cotton pom pom balls, bread/dried beans, small stones, t-shirts, jumpers, a shopping-bag of dry leaves, balloons, string, a stick (~1m tall).

Group size

Some of these activities may work better in smaller groups, if possible split the class in 2 and have different activities going at the same time. If the weather is good take a group outside, and follow the instructions below for adapting different activities to the outdoor setting.

Certificate of Completion

SEAI can provide you with certificates of completion for each of the children in the class. Once you have completed the lessons contact schools@seai.ie with the number of certificates you need and the address to send them to. Feedback on the lesson is also welcome.

Introduction:

Today we are going to learn all about Energy.

Energy is special. There's lots of it about and it's very useful. Energy allows us to do things- like talk, and walk, and run. Everything needs energy to do things -

*It gets you out of bed in the morning
It means that birds can fly, tigers can roar,
It lets dolphins swim fast and catch fish
It makes wind blow
It makes the sun shine
It makes plants grow
It makes cars move, planes fly and lights to glow*

It is very important to save energy and not to waste it, but I have a picture here of a friendly monster called Guzzler who uses loads and loads of energy because he doesn't know any better.

1: Picture of Guzzler (5-10mins)

Introduction to Guzzler: Pages 1-6

There are lots of different ways we can get energy? Do you know the names of any? Elicit response – Electricity, petrol, wind, sun. (HINTS: how does a car get it's energy? What makes a plant grow?)

There are lots of ways Guzzler uses up energy. Do you want to play a game to show how we all use energy?

Elicit Response –*Yeah!*

Activity for Children

- a) Hand out colour-in sheets of Guzzler. Available from <https://www.seai.ie/teaching-sustainability/preschool/>
- b) Ask the children to draw or create their own version of Guzzler
- c) Have a competition for best picture

Outdoors: Instead of colouring in the sheets, the children can go outside and collect natural green materials which can then be attached to the sheets to create guzzler's coat.

This can lead to a brief chat about the insulating properties of leaves, and how many animals use leaves to keep themselves warm; e.g. hedgehog's hibernation chambers and some birds' nests are lined with leaves for this purpose.

2: Wavy Hands Game: Introducing Energy (5mins)

Do you know where we get our energy from?

Elicit response –

Energy from food: Pages 7-9

Explain that we get our energy from eating food and by eating healthy food we get more energy to do things we like. Ask the children what they like to do and if they think they need energy to do them (such as playing, running, jumping, dancing, singing etc.).

In this game you have to listen very hard to what I have to say. I'm going to call out some things that guzzler does to get energy, use energy and save energy. If you have ever done them too, put both hands up in the air and wave them about. So will we try a test run? Put your hands up if.... You came to pre-school today!

Make sure everyone puts two hands in the air. *Very good, now you know what to do, will we begin?*

Elicit response – *Yeah!*

Okay, here we go....

Wave your hands in the air if?

- *You had your breakfast this morning*
- *You have ever eaten breakfast cereal*
- *You have ever turned on a light*
- *You have ever been in a car*
- *You have ever been on a bus*
- *You have ever been on a plane*
- *You have ever eaten potatoes*
- *You have ever used radiators in your house*
- *You have ever watched the telly*
- *You have ever turned off the telly when you left a room*
- *You have ever listened to the radio*
- *You have ever turned off a light when you leave a room*
- *You have a cooker in your home*
- *You have a bath*
- *You leave the water running when you brush your teeth*

Well done everyone! How do your arms feel? Anyone's arms tired?

Elicit response – *Yeah/No well even if you're tired or not tired, you still used up lots of energy by waving your hands in the air! Good, that shows that you all have lots of energy!*

Outdoors: This activity can be conducted in the outdoors, preferably in a green space, following the same instructions. Delivering the activity in the outdoors will allow the 'waving hands' response to be substituted for other actions such as 'jumping up and down' or 'stamping feet'.

3. Mime Game: Using Energy (5-10mins)

Ask individual children to mime how they use energy – for example: eating, sleeping, running, playing games, walking, washing etc... You may need to give them an action and for everyone else to guess.

Well done everyone – you remembered lots of different ways we use energy!

Energy from food: Pages 12-13

Outdoors: This activity can be conducted in the outdoors, preferably in a green space. With the extra space, the students' mimes are likely to be a bit more exaggerated and therefore more fun! If the students are slow to come up with their own ideas of what actions to do, you can have a prepared list of actions, which you can whisper to each child in turn (a bit like a game of charades).

Alternatively, children can be given 5 minutes 'play time' outside with the instructions that they are to try and remember what they were doing as they will be asked how they were using energy during play after the 'play time' is finished.

4. Hot hands: Transfer of Energy (5mins)

Energy is amazing, you can also pass energy from one thing to another. Do you want me to show you how?

Ask students to place their hands on their face. Do their hands feel cool? Warm? Now tell students to rub their hands together quickly (maybe count to ten together) and ask students to place hands on their face again. How do their hands feel now? Why do they think their hands warmed up? The energy they used to move their hands changed to heat energy.

Outdoors: This activity will work particularly well in the outdoors, on a cold day. It should be conducted in a green space if possible, following the same instructions.

The children can also be asked to cup their hands around their mouth and to exhale warm air on them as this demonstrates the transfer of heat energy. If they can see their breath you can mention that that is heat energy being lost.

5. Clothes Race: Saving Energy (5-10mins)

Explain to the children that it's important to save energy and that there are lots of ways that they can help to save energy. Give examples such as:

- *Walking or cycling instead of travelling by car*
- *Reusing your lunch box and drinks bottle*
- *Switching lights off after they leave the room*
- *Turning off the television when they're finished looking at it*
- *Recycling*
- *Taking a shower instead of a bath*
- *Putting the plug in the sink to save water*

Another good way of saving energy when you're cold is to put on more clothes instead of turning up the heat!

Ask the children if they want to play a game to show how this works

Have a clothes race to show how warm they can keep us...

Choose two children and tell them they have one minute to put on as many clothes as possible and the winner is the one who has the most clothes on at the end. Give them a helper each. Ask half the class to support one team and the rest to support the other. When they have all the clothes on ask them if they are warm?

Elicit response: Yes!

Ask class: *Why?*

Elicit response from class: They have clothes on and they have been moving fast.

Saving Energy: Read through pages 10-25 to show and teach children about ways to save energy
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Extension: This activity can be run prior to taking the group outside for **Activities 2, 3, 4 or 7**. It can be used to demonstrate the importance of wearing extra layers when being in colder air and can be conducted immediately before going outdoors, as a lead-in to getting everyone to put their warm layers on (e.g. coats, hats and gloves, etc. depending on time of year).

6. Wind Race: Renewable Energy (5-10mins)

Did you know as well as getting energy from petrol, electricity, gas and oil, we also get energy from the sun, wind and water? These are very good ways to get energy because they can be used over and over again and never run out and that's why they're called renewable energy. They're also much better for the environment.

Let's play a game that shows us how our wind energy works...

Have children practice blowing out of a straw (stress the point that they should not suck in for this activity). Blow on each other's hand and ask them if they *can feel a tickle? This is wind energy.* Point out that we cannot see wind, but we can feel it. All we can see is how it moves things.

Talk about how some objects are heavy and some are light. Invite them to make predictions about which objects will be easier or harder to move with the power of wind.

Ask for some volunteers to select items (e.g. pom poms, dried beans, stones) to blow across a tray. Have them place the objects on the far end of the tray and blow them across to the other side.

Ask how did the objects move? Where did they get the energy from?
Elicit response - wind

Select a heavy and a lighter object. Ask two students to race by blowing on an object. Make a finish line by sticking some tape on the tray. *Which object do you think will win the race- the lighter or the heavier objects?* Let them experiment for as long as they can keep their concentration.

Explain that more energy (wind) is needed to move the heavier object than the lighter one.

Energy Quiz: Ask children questions about ways to save energy, pages 26-29
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7. Outdoor Wind Activity: Renewable Energy (10-15mins)

The following activity should be conducted in the outdoors, preferably in a green space. Pick a dry day to go outside with your group of students. Explain to them that you are going outside to see the energy of the wind.

Pick a relatively open spot on your grounds, and take a handful of dry leaves from your bag of leaves. Once you have everyone's attention, place the handful of leaves on the ground, and carefully release your hand. The leaves should flutter or blow away (depending on the strength of the air currents on the day, and in that particular spot) more or less in one direction.

Ask the students questions such as:

"Why are the leaves moving?"

"Why are they moving in that direction?"

"Which way do you think the wind is coming from?"

"Are the leaves moving fast or slow?"

"Do you think the wind has lots of energy; is it very strong or is it gentle?" and

"Why do you think that?"

"Is there somewhere else close-by that we could put the leaves, where the wind might not blow them around so much?"

Now go to a more sheltered place on the school grounds, and repeat your actions, placing a handful of dry leaves on the ground and watch them move.

Repeat the questions above.

Then ask additional questions:

"Do you remember in Guzzler's Book, Aoife's Daddy is drying his clothes on the clothes line, using the wind?"

"Do you think we could do the same here in school?"

"If we wanted our clothes to dry quickly, do you think we would put them in the windy place, or in the calm place?"

"Which place do you think would be best in our school for drying clothes?"

Instead of using the leaves, or in addition to them, you can demonstrate the same principles using a balloon (full of air), tied with light string (~50cm long) to the top of a stick, e.g. a bamboo stick (~1metre high). By sticking the stick in the ground, you can watch the balloon blow and bounce away from the stick. This is another way to demonstrate which direction the wind is coming from and how much energy it has.

Drying Clothes: Pages 27

Additional Suggestions

1. Select 2/3 children to be energy monitors each day. They will be responsible for making sure the lights are turned off before everyone leaves the room to go and play and to ensure the doors and windows are closed. This will give them a sense of ownership about the energy used in the classroom.
2. Make some signs for the room such as “Turn off the Lights”, “Close the Door”. This will help with their communication skills.
3. Get your own Guzzler – either get a green teddy bear or see if the class can make their own Guzzler. He can be a reminder about saving energy.

More Reading

Here are some other books on the theme of energy, suggested by Early Years educators in Ireland:

- Why Should I save energy? by Jen Green
- The Wind Blew by Pat Hutchins
- Switch On, Switch Off by Melvin Berger
- Energy-Heat, Light and Fuel by Darlene Stille
- Energy Makes Things Happen by Kimberly Brubaker Bradley