

ONBOARD ACTIVITY DESCRIPTIONS

Elementary Grades 1-5:

Plant/Animal Interactions-

Dance of the Honeybee –

30 minute activity (grades 1-2)
Students will learn about the life cycle of the honeybee and their importance to our environment and food system. Then they will do a role-play to discover the many “hats” a worker bee wears in her lifetime and how queen bees, worker bees, and drones all differ.

Or

Scavenger Hunt –

30 minute activity (grades 3-5)
Students will form teams to fill in their scavenger hunt without the aid of their chaperones. They will have to find examples from around the barge of how plants and animals interact in symbiosis (aquaponics), parasitism (carnivorous plants), mutualisms (pollination) and antagonisms

Garden Friend or Foe Game –

30 minute activity (grades 1-5)

Not all bugs are bad! And sometimes the cutest animals are the most destructive to our food systems. Students will play for points as 3 teams, trying to create the best organic garden to help their “crops” grow by selecting commonly found organisms from the game board. Students will quickly learn the difference between garden beneficial (ladybug, dragonfly, worm); and garden pests (vine weevil, cabbage moth caterpillar, rabbit).

Botany/Planting-

Seedling Planting –

30 minute activity (grades 1-5)

Students will get the opportunity to become urban farmers by growing their own hydroponic plant (lettuce, basil, etc.) that they will care for at home or at school. Students will also learn about what plants need to survive.

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Plant Part Chart –

30 minute activity (grades 1-5)

Students will discover plant anatomy on their plate. For instance, they will match carrots and onion to the root of a plant diagram. They will assemble a model plant and learn the function of each plant part. Finally, they will learn about leaves and their role as the energy factory of a plant through photosynthesis.

Hungry Planet –

30 minute activity (grades 1-12)

Students will examine 3 different households from around the planet, using a map to find and describe the geographic location of each country depicted, including land and water resources, fisheries, and climate. Then students will make assumptions about how those intersect with their regular diet.

How Many Miles on my Menu? –

30 minute activity (grades 1-12)

Students will be encouraged to consider their impact on the environment by discussing how food moves around. Students will complete an activity that uses a map and rulers to calculate how many miles food moves around the country before it gets to their plate. Students will incorporate these lessons into their considerations of future food choices.

The Living River and You-

Estuary Organism Study —

30 minute activity (grades 3-8)

Students will explore the macro-invertebrates that are a vital part of the food chain and estuarine eco-system using an “eel mop.” We’ll discuss how glass eels (the juvenile stage of the American Eel) are environmental indicators of our rivers. We may catch a few in our mop, but we’re certain to find some macro-invertebrates.

The Problem with Pollution—

30 minute activity (grades 3-8)

Many know that littering is bad, but how long can trash stay in marine ecosystems and in what ways can they endanger wildlife? We’ll also explore the effects of chemical pollution on fish olfactory senses and migratory success, and how oil spills can compromise thermoregulation of birds and mammals and smother fish gills with role-plays and simulations.

Intermediate Grades 6-8:

Food Footprint- (See Above)

The Living River and You- (See Above)

All About Energy-

Electrical Circuits and Conductivity—

30 minute activity (grades 6-8)

Students will learn about the history of humans and electricity from Ben Franklin to Tesla. Students will help demonstrate the difference between direct current (DC) and alternating current (AC). Students will discover unique ways to complete a circuit using human touch, and a variety of conductors.

Model Green Home –

30 or 60 minute activity (grades 3-12)

Students will learn more about Energy Conservation by splitting into teams and choose up to ten features as savings for our “Home.” Looking at the results, students will find the winner and consider ways to curb their own emissions. The 60 minute version will give students a chance to apply their energy savings to their own “energy grid”.

The Science behind Climate Change:

In this 2 hour program students will learn how scientists track climactic changes in our planet. Students will see what the carbon storage or sinks are on our planet by playing a carbon cycle game. We will then learn about how tracking data helps us confirm changes by looking at ice cores, tree cores, and weather data. We will wrap up by learning about our role and how we can use The Science Barge as an example of how humans can use innovation to be resilient in times of change

High School Grades 9-12:

All About Energy- (See Above)

Food Footprint- (See Above)

Bio Mimicry/ Green Design Challenge-

Bio-mimicry –

30 minute activity (grades 9-12)

Students will learn how some of the greatest technological and design dilemmas – from self-cleaning paints to passive-cooling buildings – have been solved by mimicking nature’s solutions. This is called Biomimicry!

Students will be asked to work in teams to come up with their own invention or system that mimics a plant/animal adaptation or a natural

Green Design Challenge—

30 minute activity (grades 9-12)

Students will be asked to work in small groups where they must creatively come up with ways to design buildings that align with particular sustainable design parameters. Students will be encouraged to use their imagination and will be invited to share their designs with their peers. They are encouraged to incorporate Biomimicry examples into their design.

Climate Change and You-

In this 2 hour program students will learn about the human role and impact of climate change to our way of life, biotic, and abiotic resources and species around our planet. Students will learn about water resource limitations, disease spread through vector species, and how our changing water cycle will impact coastal cities. After, students will learn about how humans can use innovation to be resilient in times of change with examples around the Science Barge.