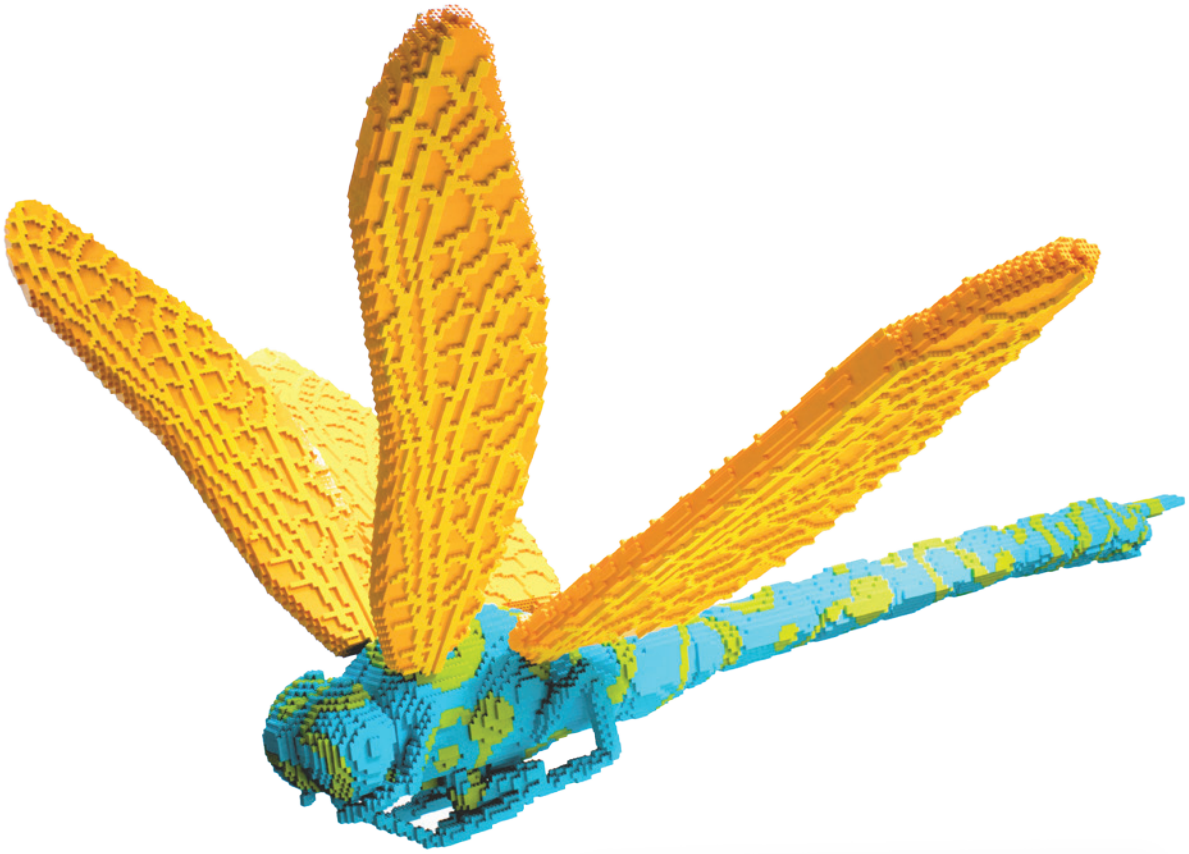


Sean Kenney's

NATURE POP!®

Made with LEGO® bricks

produced by imagine exhibitions

Educator Guide

Sean Kenney's NATURE POP! Made with LEGO® bricks

Table of Contents

Introduction to the Exhibition

Show your students the bright and brilliant connections between Art and Nature in **Nature POP!®** a new exhibition from artist Sean Kenney. Featuring over 40 sculptures made from more than 800,000 LEGO® pieces, the exhibition explores the beauty of nature through contemporary, stylized, and colorful displays that stand in striking contrast with their surroundings. Blending art, science, and innovation, the larger-than-life sculptures in **Nature POP!®** invite students to admire Sean's artistry, reflect on the complex natural world, and consider the incredible feats of engineering on display.

Sean's vibrant, gravity-defying structures present a playful spin on traditional sculptural art—making it accessible to all students and providing strong connections to your curriculum. Inspired by the pop art movement, **Nature POP!®** plays on that movement's principles by blurring the boundaries between the austere and the everyday, and draws from a belief that everything is interconnected. The exhibition challenges students to consider: just as LEGO bricks interconnect, how is everything in nature interconnected?

About this Guide

The guide is composed of ten activities that embody the ideals of STEAM and are aligned with the Next Generation Science Standards. These lessons and activities bridge the learning from the exhibition to the classroom.

Activities

There are five 3rd to 5th grade and five middle school activities that highlight the themes from the main exhibits in the exhibition. The activities cover a variety of performance expectations, so teachers can choose which activities are best aligned with their curriculum and which best fit their students' needs and interests. The lessons are follow-up activities designed to be completed after your field trip to enhance and expand each student's experience with the **Nature POP!® Exhibition**.

Sean Kenney's NATURE POP! Made with LEGO® bricks

Sensory Perception

Activity: **Two Eyes Are Better than One** – Students perform three activities to learn more about how our eyes work together and why it is advantageous to have two eyes rather than one.

Grade Level: 3rd to 5th

NGSS Standard: 4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

Materials:

- ✔ Paper
- ✔ Pencils

Description

1. While exploring the **Nature POP!® Exhibition**, ask your students to pay special attention to the various senses that are highlighted in the animals on display.
2. When you return to the classroom, ask students to share their observations, and ask them why they think these animals evolved to have these senses. Ask students to discuss what they know about eyesight in various animals, and ask if all animals have two eyes. Ask students why most animals have two eyes and how having two eyes is useful.
3. Ask students to make a prediction about why humans have two eyes and if they can see better with one eye or two.
4. Tell students that they are going to do three activities to show how our eyes work together to help us see.

5. For activity one, have students look straight ahead and, without turning their heads, record what object they see that is furthest to their left and furthest to their right. Now have students cover one of their eyes and record what they can see that is furthest to their left and furthest to their right. Have them repeat with the other eye. Discuss the results with students.

6. For the second activity, have each student roll a piece of paper into a tube. Have each student look through the tube with their right eye and then place their left hand face up halfway up the side of the tube on the left side. Their left hand should be about five inches in front of their left eye.

7. Have students stare at a distant point at the wall with both eyes open. As their eyes focus, they should see a "hole" form in their left palm. Give students a few minutes to test this out and then discuss with the class what they saw.

8. For activity three, have students hold a pencil about two feet in front of them. Have them open their right eye and close their left eye and look at the pencil. Then have them close their right eye and open their left eye. They should see the pencil "jump." Ask students to discuss why the pencil jumps and to predict if the jump will become more or less pronounced if they move the pencil closer or farther from their faces. Have students move the pencil closer and farther away and record the results.

9. Discuss with students that the importance of having two eyes is for depth perception and location. Our brains combine the information they get from both eyes to help us see more and to help us have a depth perception. Students saw holes in their palms because their brains combined the images being received from both eyes. The pencil seemed to jump because each eye has a different view of the object. Two eyes really are better than one!

Sensory Perception

Activity: **The Best Ears To Hear** – Students design different shaped ears to test which shapes and sizes help them hear best.

Grade Level: Middle School

NGSS Standard: MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

Materials:

- ✔ Scissors
- ✔ Tape
- ✔ Glue
- ✔ Stapler
- ✔ Construction materials such as cardboard, foam, craft sticks, construction paper, and foil
- ✔ Sound-making devices such as a bell, drum, spoons, whistle, harmonica, etc.

Description

1. While visiting the **Nature POP!® Exhibition**, ask students to focus on the ears of various animals. Have them identify how ear shapes are similar and different. Have them pay close attention to all the rabbits in the exhibition and try to identify how their ears are different.
2. When back in the classroom, have students share their observations of ears and discuss why they think ears are shaped differently.
3. Show students pictures of the ears of various animals, and have them look for similarities and differences.
4. Tell students that they are now going to design new ears for themselves based on the ears that they've seen. Have students draw out the design for their ears and have them approved by you. Be sure the designs include an opening for the earhole.

5. Tell students to collect their construction materials, and give them 10-15 minutes to construct their ears.

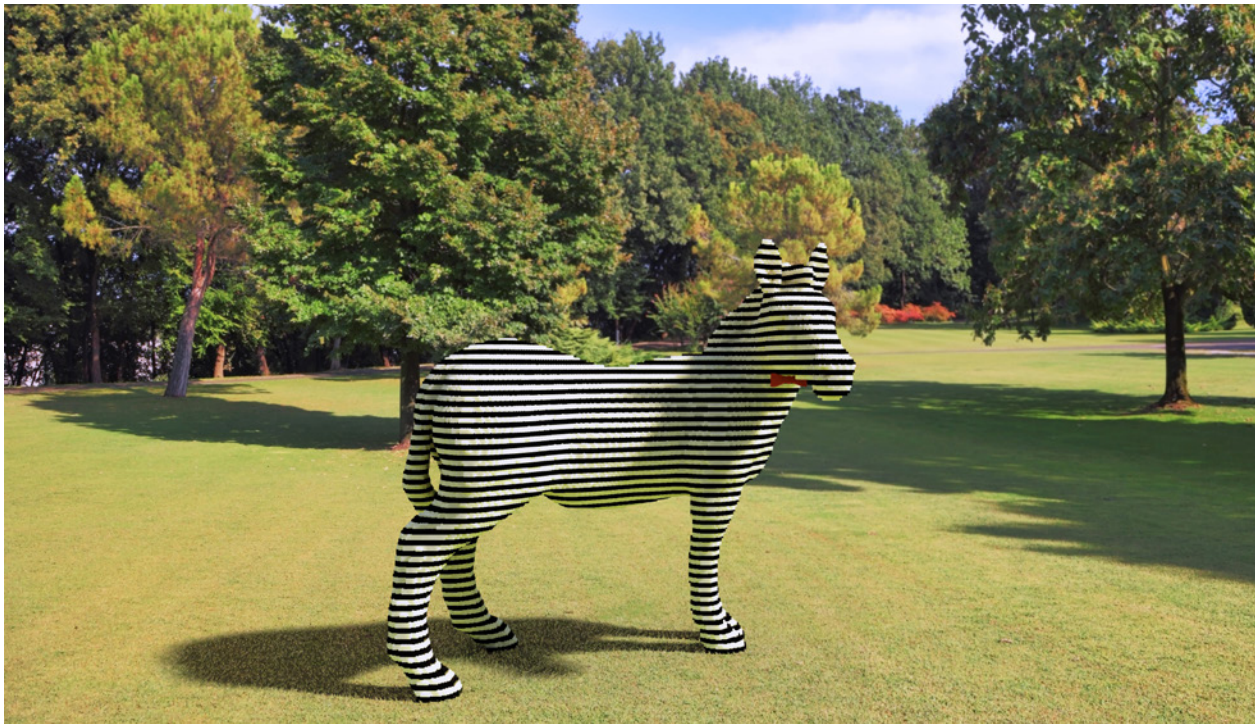
6. Have students take a pencil, paper and their ears outside to a large field, gymnasium, or open area. Have students stand at one end and you stand at the other. Tell them you are going to make several noises that they need to identify.

7. Have students hold up their ears, and make the sounds with your materials one at a time. Have students record what they think each sound is and then return to the classroom.

8. When back in the classroom, tell students what each sound was, and have them record which they got correct.

9. Have students with the most correct answers show their ear designs to the class, and have the class identify common features.

10. Give students a second opportunity to design new ears based on what they have identified as key features then test the new ears!



Sean Kenney's NATURE POP! Made with LEGO® bricks

Sensory Perception

Activity: **Buzz Bee Buzz** – Students make models of bees with vibrating wings. When students fly their models, they mimic the sound and the science behind the noises insects make.

Grade Level: Middle School

NGSS Standard: MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

Materials:

- ✔ Craft Sticks
- ✔ Pencil topper erasers
- ✔ Index cards
- ✔ Stapler
- ✔ Scissors
- ✔ Rubber bands (big enough to go around the craft stick)
- ✔ Markers
- ✔ String

Description

1. While visiting the **Nature POP!® Exhibition**, ask students to notice all the flying animals in the exhibits. Ask them how and why they think they make sounds.
2. When back in the classroom, ask students to explain what sound is and how it is produced (vibrations).
3. Ask students to mimic the sound a hummingbird makes or the sound of a bee. Discuss how sound is created through vibration. Have students explain how different instruments make sounds and how humans make sounds.
4. Tell students that they are going to make new models of animals that will go into the **Nature POP!® Exhibition** but instead of them being stationary and made out of LEGO bricks, their models will produce sound.

5. Tell students that their model bees will "fly" by being swung by a string. These bees will also make a sound similar to the buzzing sound bees make.

6. Put students in groups and pass out the materials. Challenge students to construct a bee from those materials that can be swung from a string and that will make a buzzing sound. Remind groups that the buzz is made through vibration.

7. Give groups 15-20 minutes to construct their model bees and have them share their designs with the class.

8. Discuss what plans worked and what plans didn't work and why. Have all groups construct new models following the directions below:

9. Put a pencil-topper eraser on each end of the craft stick.

10. Cut an index card so it fits in the space between the two erasers on the stick.

11. Staple the card to the craft stick. It should stick out about two inches (five centimeters) from one side of the stick.

12. Cut the string to two feet and tie one end onto one of the erasers.

13. Stretch the rubber band around the craft stick from one eraser to the other, and make sure it's snugly in place.

14. Color or decorate the model with markers.

15. Go outside and give each group plenty of space to swing their bees in a circle above their heads and listen to the noises they make. They should sound like a swarm of bees.

16. Ask students to explain how the bee is making noise then give each group time to tinker with the design to try to get them to make different sounds. Ask students to try to improve their original models based on what they learned from building the new model.

Sean Kenney's NATURE POP! Made with LEGO® bricks

Evolutionary Adaptations

Activity: Who's the Fittest of Them All? – Students participate in a game where the predators have various adaptations to hunt their prey. Students test which of these adaptations is best at capturing prey then calculate how that affects the predator's population.

Grade Level: 3rd to 5th

NGSS Standard: 3-LS4-2. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all

Materials:

- ✔ Dry beans of four different colors, a few hundred of each type
- ✔ Four plastic containers
- ✔ Bowl or box for mixing the beans
- ✔ Plastic or paper cups (one per person)
- ✔ Predator "mouths" of several types, such as plastic forks, knives, spoons, chopsticks, forceps, straws (one per person in each predator group, plus extras for "predators" that change groups during the game)
- ✔ Stopwatch
- ✔ Level outdoor area of grass, sand, or bare dirt, roughly 15 x 15 feet or indoor carpeted area
- ✔ Markers of several colors
- ✔ Calculators (one per predator group)

Description

1. While visiting the **Nature POP!® Exhibition**, have students try to identify the animals as either predators or prey. Have them explain why they think the animal is a predator or prey and have them name features of the animal that helped them come to that conclusion. For example, the animal has large claws or sharp teeth.

2. When back in the classroom, ask students to reflect on those features and discuss how these animals evolved to have these special features so they can survive.

3. Tell students that today they are going to play a game that models how animals evolve to have these special adaptations.

4. Mark off a zone about 15 x 15 feet square to serve as a habitat. Grass, sand, or dirt is ideal because it makes it harder for the predators to capture their prey.

5. Count out 100 of each of the four different-colored dry beans and place them into a container. Mix thoroughly and randomly spread in the zone.

6. Using a marker, make grids on your butcher paper or flip chart so you can keep track of at least three generations of data. The data chart should have the name of the tool (bare hand, chop stick, etc.) on the y axis and the bean type on the x axis. See example below:

	Black	White	Pinto	Red	Total
Hand					
Chopsticks					
Fork					
Total Prey Captured					

7. Divide participants into three or more equal-sized predator groups. Assign one person as the time keeper. Assign one person to reset the beans every generation, record the results, and enforce the rules.

8. Randomly assign each predator group a type of "mouth." For instance, each member of one group should use their dominant hand (one hand only) as their mouth; each member of another should use a fork; another group should use chopsticks; etc.

9. Give each predator a cup. It will serve as their "stomach."

10. Review these rules with participants:

    a. All bean-prey are of equal value.

    b. Only the assigned "mouth" can be used to capture prey.

    c. Captured prey must be placed into the stomach-cup to count.

    d. Prey may not be scraped or shoved into the stomach-cup; the cup must never touch the ground.

    e. All predators must stay outside the habitat until the hunt begins (when the Timer calls "GO!")

    f. Each round of hunting lasts one minute.

    g. All predators must stop hunting as soon as time is called (when the Timer calls "STOP!"); prey that is in the mouth, but not yet in the stomach, must be dropped

11. Have all the predators turn their backs to the zone, and have the time keeper say "GO." All the predators hunt for one minute.

12. At the end of one minute, have the timekeeper say "STOP." Have each predator count their beans, and have the recorder input the data on the table.

13. Have members tally the number of captures for each type of bean, and add them together. For example, if the five members of the Hand Group captured 10, 8, 4, 7, and 3 red prey, respectively, their group captured 32 red prey in total. Have the recorder put data on the table.

14. Each one-minute round of play represents one reproductive generation for both predators and prey.

15. When all data are recorded, add together the total number of prey captured by all groups, and divide by the number of groups to calculate the average number of prey captured.

16. Adjust for the number of predators surviving: Before playing the next round (Generation 2), use the average number of prey captured to adjust group sizes—a change that represents the relative success of each kind of predator.

17. Groups that captured more than the average number of prey gain a member; those that captured fewer than the average number of prey lose a member. For example, if the Chopsticks Group captures fewer than the average number of prey, and the Hand Group captures more than the average number of prey, one member of the Chopsticks Group is transformed into a member of the Hand Group for the next round.

18. Adjust for the number of prey surviving: Find the number of each prey type remaining in the habitat at the end of the round.

19. Since each type of prey (color of bean) started with 100 individuals, the number remaining for the first round will be the original 100, minus the total number of prey types captured. For example, if all predators together captured a total of 11 black-bean prey, there would be 89 remaining. Assume that each remaining prey member will reproduce one individual. So—for this example—we would count out an additional 89 black beans and put them in the bowl. Repeat this process for each of the remaining prey types.

20. Complete as many rounds as time allows—ideally, three generations or more. Be sure to adjust the predator and prey numbers after each generation, and spread the additional prey beans randomly around the habitat before the start of each new round of "hunting."

21. When you're done, examine and graph the results. Do you see any trends in population numbers? What explanation(s) might account for these trends? Did any of the types of predator or prey go "extinct"? Why?

Evolutionary Adaptations

Activity: What if That Rabbit Had a Baby? – In this activity, groups of students will predict what the offspring would look like if the rabbits in the Nature POP!® Exhibition mated. Students will learn about the basics of heredity and how genes are passed from parents to offspring.

Grade Level: 3rd to 5th Grade

NGSS Standard: 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

Materials:

✔ A coin for each pair of students

Description

1. Before visiting the Nature POP!® Exhibition, ask students why people look different and why siblings often look alike. Ask students why people get some characteristics from their mothers and some from their fathers.
2. While in the Nature POP!® Exhibition, have students pay close attention to all the rabbits. Have them all make a list of five things that are different about the rabbits. For example, their overall size, the color of their fur, the pattern of their markings, the shape of their ears, and the size of their feet.
3. When you return to the classroom, ask students to share their lists, and write the responses on the board.
4. Have the class choose five of these characteristics to focus on, and identify the phenotypes (observable traits). For example, large feet vs. small feet and pink fur vs. yellow fur.

5. Have students choose which of the five traits they want their rabbit to have. Partner students up, and tell them their rabbits are going to mate. One student flips a coin, and their rabbit is assigned male (heads) or female (tails). The other partner's rabbit becomes the opposite sex.

6. Have each group make a chart like the one listed below, and give them a coin. Have them fill in the chart with the characteristics of each of their rabbits.

Trait	Male	Female	Heads/Tails	Sketch of Trait
Sketch of Offspring				

7. Explain to students that when parents create offspring, they both pass their genes onto the child but only one of the genes becomes dominant (or is visible).

8. Ask each pair to look at the first trait listed on their worksheet and read the description of the male and the female.

9. Have each pair flip a coin and if it comes up heads, the offspring have the male gene and if it's tails, it has the female gene.

10. Have pairs repeat this process for the other traits listed on the worksheet.

11. After assigning the traits, have students sketch and construct their new rabbit.

12. If time allows, repeat this process several times with new offspring to demonstrate why offspring from the same parents can look so different.

13. Have teams present drawings of their offspring, being sure to indicate how the offspring are similar and different than their parents.

14. Ask students to describe how this activity models real life genetics.

15. Have students compare how the parents' generation and the offspring's generation look similar and different. Why is this?

Evolutionary Adaptations

Activity: Natural Candy Selection – In this activity, students will unknowingly act as predators of candy. They will then discuss whether their predation was random or whether they had certain preferences. They will graph their results and determine how selective predation can impact a population and cause natural selection.

Grade Level: Middle School

NGSS Standard: MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

Materials:

- ✔ Six very different types of candy (chocolate, licorice, gummies, etc)
- ✔ Bowls

Description

1. While exploring the **Nature POP!® Exhibition**, ask your students to identify which animals are predators and which are prey. Ask them which animals they think there are more of in the wild.
2. When you return to have students share their thoughts on the exhibition. As you do, pass around a bowl filled with the six different types of candies and have students choose one or two. Don't talk about the candy. Have students focus on the exhibition and their observations about predators and prey. (Be sure to count how much of each type of candy you have to start.)

3. After more than half of the candy has been chosen, ask students why they think there is great variation among individuals of animal species. For example, students can look around the room and list the characteristics that vary among humans. Then, ask the students why variation might be significant. One reason variation is important is that variation allows for differential survival of individuals.

4. Reference the candy bowl and the remaining candies, informing students that, perhaps unbeknownst to them, these candies represented prey. Because of our predation, some of the prey survived, and some died.

5. Count which candies remain, and list them on the board. Ask the students if they remember which candies were originally available. Make a list on the board of the original set of candy.

6. Inform students that you secretly counted the number of each candy before class.

7. As a class, make a bar graph that compares the candy before and after students made their selections.

8. Now ask them to list the traits of the candy they chose from the candy dish. (Examples include: chocolate flavor, large size, favorite brand, bright packaging, etc). These are the traits that led to the removal of certain candies.

9. Make a list now of the traits of the candies that were not chosen (examples: licorice flavor, small size, sour taste). These are the traits that allowed the candies to survive being passed around the room.

10. Ask students what their predation did to the population. (It decreased the candy population size, but it also changed the composition of the candy population.)

11. So, the fact that there were different candies with different traits resulted in some candies being eaten and others surviving. This is what selective predation (a form of natural selection) does with individuals in a population and between populations.

12. Ask students if predation is random? Not always, sometimes predation is selective. Do you think you would get the same result if you passed the bowl of candy around to another class?

Sean Kenney's NATURE POP! Made with LEGO® bricks

Relationships, Dependencies, and Ecosystems

Activity: Let Them Drink – Students will model how runoff and pollution are harming many of the species found in the **Nature POP!® Exhibition** and will evaluate how to mitigate the effects of pollution.

Grade Level: 3rd to 5th

NGSS Standard: 5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Materials:

- ✔ Two sheets of plane scrap paper per student
- ✔ Spray water bottle
- ✔ Water-based markers (blue, brown, red, and black)
- ✔ Green and black permanent markers

Description

1. While in the **Nature POP!® Exhibition**, have students try to identify the impacts and the relationship between humans, animals, and the environment.
2. After returning to school, ask students in what ways humans use animals and the environment. After students respond, ask what effect those practices have on animals. Discuss how humans are destroying animals' habitats and polluting their drinking water.
3. Tell students that they are all going to model how humans impact animals' water supply. Have each student crumple up one piece of paper and then flatten it out on their desk. This paper will be their map of a beautiful countryside.

4. Using the blue marker have students draw where they think the low points are on the paper. This is where, when it rains, the water will drain and will be our rivers. Have them trace the high points with the permanent black marker and have them use the permanent green marker to draw trees and grass onto their countryside.

5. Tell students they need to build farms for food. Students should draw a handful of farms on the map with the brown marker.

6. Tell students that with all this food, they'll need a landfill, factories, and houses. Draw factories and landfills in red and houses in black.

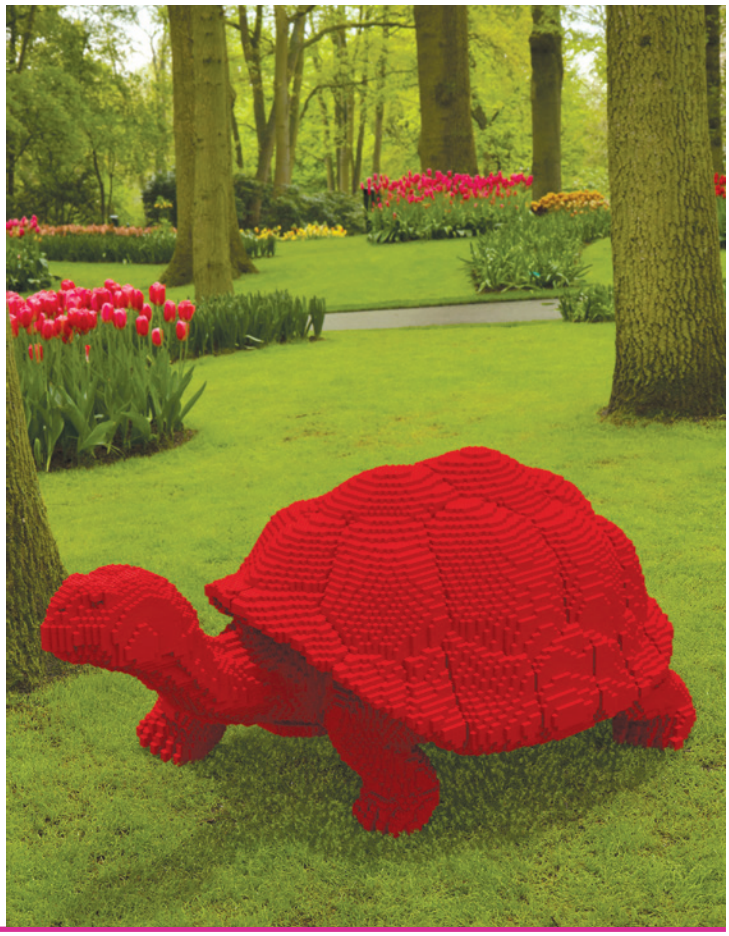
7. Ask the student to predict what's going to happen when it rains. Take the spray bottle and spray all the maps. Have students observe then draw an image of what they see.

8. Discuss as class what happened to the water supply. Why is it so contaminated with other colors? Why didn't the green get into the water?

9. Have students crumple their second paper and flatten it back out. Tell them that they are going to redo this experiment, but this time, they need to try to keep all the pollution out of the water.

10. Give students some additional tools like paper clips, clay, or aluminum foil, and have them discuss how to use these to reduce pollution in their watershed. Students should also focus on where they are putting the farms and factories.

11. Spray the new maps with water and have students compare the results from the first maps.



Sean Kenney's NATURE POP! Made with LEGO® bricks

Relationships, Dependencies, and Ecosystems

Activity: What Does It Mean To Be Alive? – Students question and define what it means to be alive and conduct investigations to test their ideas.

Grade Level: Middle School

Performance Standard: MS-LS1-4. Construct a scientific argument based on evidence to defend a claim of life for a specific object or organism.

Materials:

- ✔ Living or nonliving objects for five stations. These can include but are not limited to things like shells, dead insects, raisins in soda water, dry yeast, and corks.

Description

1. As you explore the **Nature POP!® Exhibition**, mention to students how lifelike the sculptures are. As you continue to observe, ask students to think about what it means to be alive. How do we know these sculptures are not alive?
2. Tell students that they are going to debate whether or not certain fictional creatures are alive or not, but first they need to determine what it means to be alive.
3. Ask students to define what it means to be alive by listing the characteristics something needs to have to be considered alive. Write down students' ideas on the board. Some common answers are it needs air and breathes, it moves, it poops, etc.

4. Have students choose 10 of the characteristics they've come up with and create a data table where in the first column lists the 10 characteristics followed by five blank columns.

5. Set up five stations around the room with living or nonliving objects. Have groups spend about five minutes at each station determining if the objects meet the criteria for each characteristic listed on their data chart. Have students mark the data chart with a yes or no if it meets the criteria.

6. Have a class discussion debating if each object should be labeled living, non-living, or dead.

7. Create a list of the "official" characteristics of living things.

   - Has cells
   - Grows
   - Can reproduce
   - Responds to the environment
   - Metabolizes
   - Maintains homeostasis
   - Made of organic molecules (proteins, lipids, carbohydrates, and nucleic acids)

8. Ask class if any non-living things possess some of the same characteristics as living things? Which ones? Ask students if all things that can move are "alive"? Have them defend their opinions by referring to the results of their explorations at the stations. Ask students to describe what kinds of non-living things move?

9. Ask students to debate if they would classify zombies as living, non-living or dead. Challenge students' ideas as it is possible to defend claims about classifying zombies as either nonliving, living, or dead.

10. Have students think of other fictional creatures, and ask them to debate if those creatures are alive or not. A few interesting creatures to debate are Transformers, video game characters, and Greek gods, but it's also fun to come up with your own list!

Art & Science

Activity: **Blow Up That Image** – Students work together to make a giant mural out of many pieces of paper to demonstrate that all objects are composed of smaller parts.

Grade Level: 5th

NGSS Standard: 5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.

Materials:

- ✔ A favorite picture of nature
- ✔ Graph paper
- ✔ Rulers
- ✔ Magnifying glass (optional)
- ✔ Markers

Description

1. Before class begins, choose one of your favorite images of nature and print it. Then make copies for everyone in class on graph paper. Students should be able to see the lines of the graph paper over the image.
2. While in the **Nature POP!® Exhibition**, take note of the zebra, dragonfly, and butterfly. Ask students how the artists were able to create such large objects just using LEGO bricks. Point out how each LEGO piece by itself is nothing, but when they are put together. they make something beautiful.
3. When you return to class, tell students that you want to create something beautiful in your class similar to what was in the exhibition. However, since you don't have enough LEGO pieces, you will use paper.

4. Pass out the image that is on the graph paper, and tell students that you want to make a giant copy of this image to hang in the classroom, and you need their help.

5. Have students label the rows alphabetically and the columns numerically. Tell students that they are each going to be responsible for one cell on the graph paper and that once everyone draws their cell, they will put them all together as a class to make the mural.

6. Assign a cell to each student and have them draw what is in that cell on a large square piece of paper. Students should measure where lines meet the edges of the cell to enhance precision.

7. Put the students' drawings together, and ask for students' reactions. What do they notice? What do they wonder? Ask them how they could improve on this process and repeat with either the same or a new image.

8. Talk to students about how the sculptures, the mural, our bodies, the desk, EVERYTHING is made of tiny parts that don't function on their own but when put together make amazing things.

Art & Science

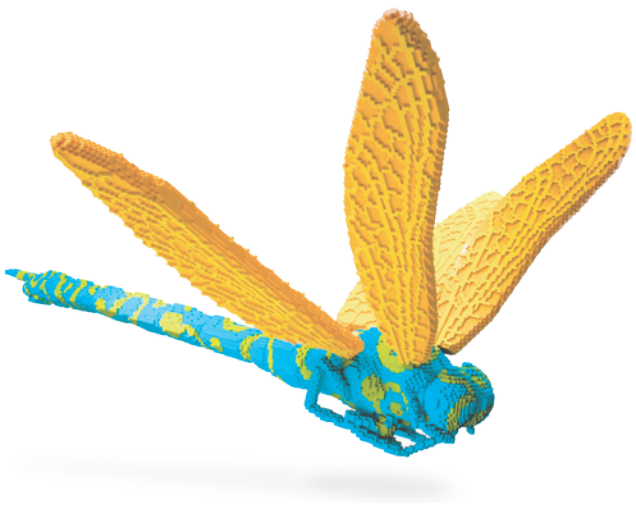
Activity: Green Space Redesign Challenge – Students brainstorm ways in which they can increase the biodiversity of their schoolyard and also design a way to enjoy the space.

Grade Level: Middle School

NGSS Standard: MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

Materials:

- ✔ Art supplies (paper, glue, markers, toilet paper rolls, pipe cleaners, etc.)
- ✔ Computer (optional)



Description

1. While in the **Nature POP!®Exhibition**, have students try to identify the various ecosystems on display. Have them pay special attention to the connection between plants and animals.
2. Ask students to brainstorm things that make an ecosystem thrive. Be sure to discuss the role of both biotic and abiotic factors and the importance of biodiversity on the health of an ecosystem.
3. Ask students to share things that they like about nature and being outside. What are the things that they enjoy?
4. Tell students that often people are concerned about the negative impact humans have on the environment but that humans are a part of the ecosystem. We can take steps to support the ecosystem while also cultivating a space that will be more enjoyable for us.

5. Put students in groups, and have them draw a floor plan of the schoolyard. It can be of one specific area or of the entire yard. Tell students they are going to modify the space so that it both increases the diversity of life there and makes the space more enjoyable for students.

6. Each group needs to come up with at least five new features that will both increase biodiversity and make the space more fun for students. Some ideas to share with students to get them thinking could be planting a garden or adding bird feeders. A garden increases the types of plants and attracts pollinators while also providing yummy food for students. Adding in bird feeders will attract more types of birds and also allow students to enjoy watching the birds eat. Students can be as creative as they want, but each group needs to come up with at least five ideas and explain how they are both increasing biodiversity and students' quality of life.

7. Once groups have come up with their five ideas, have them make a model of their schoolyard redesign using the art supplies.

8. Have each group present their models to the class, and as a class, pick a handful of ideas that are plausible and implement them at your school.