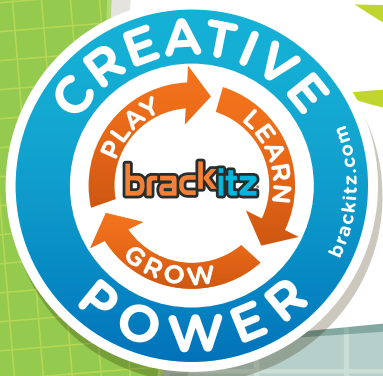


brackitz®

U1 L1
V2.0

LESSONS





Lesson 1: **HOW BIG** in 2 Dimensions?



Students are introduced to spatial thinking and vocabulary and meet a small character to compare with known objects. Using Brackitz unit planks they understand the character's size in 2 dimensions--height and width.

Objectives:



Students get hands-on practice in thinking about "bigger than" and "smaller than" in two dimensions and engage in some measurement practice. "I can" statements that students should be able to make as a result of this lesson include: "I can compare size by thinking about everyday objects."

Vocabulary used in this activity:

tall, height, wide/width, narrow, bigger than, smaller than, compare, information, data, rectangle, frame

Standards

NY State Pre-K Foundation for Common Core

Social Development - Compares and/or contrasts self to others, Exhibits self confidence by attempting new tasks independent of prompting or reinforcement, Displays accomplishment, contentment, and acknowledgement when completing a task or solving a problem by himself/herself

NY State Pre-K Foundation for Common Core

Math - Describe and compare measurable attributes, Analyze, compare, and sort objects, Identify measurable attributes of objects, such as length, and weight. Describe them using correct vocabulary, Create and build shapes from components

NY State Pre-K Foundation for Common Core

Communication, Literact - Describe and compare measurable attributes, Analyze, compare, and sort objects, Identify measurable attributes of objects, such as length, and weight. Describe them using correct vocabulary, Create and build shapes from components

ECERS-R

Language-Reasoning: Books and pictures, Encouraging children to communicate Using language to develop reasoning skills

Activities: Fine Motor, Art, Math/Numbers

Program Structure: Group time

Materials and Supplies: Time needed: 35-40 minutes

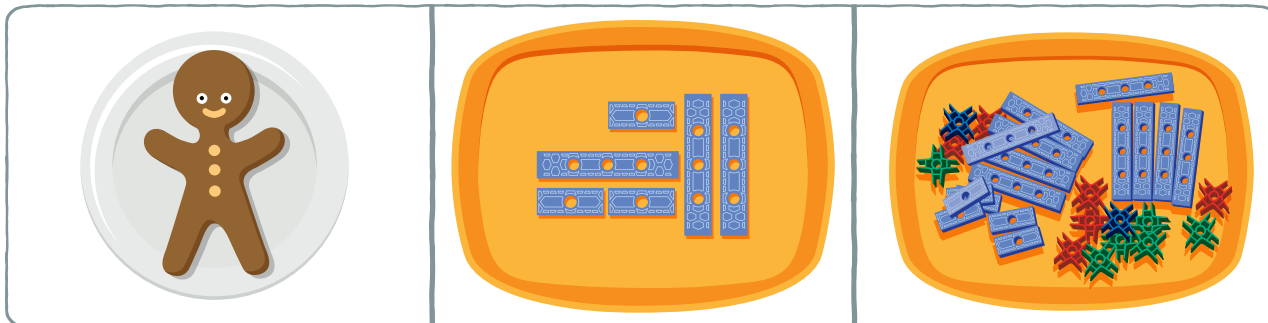
Gingerbread character, paper, pencils/crayons, Brackitz planks and 4-way connectors, Gingerbread cookie-sized "people" cut-outs. (these should be not much bigger than a child's hand). Optional: cookie or playdough to make more tactile figures, tracing paper.

Setup and preparation:

Have a character cutout and the same number of planks and connectors for each group of 2-3 students on trays, Help students cooperatively form groups of 2-3 to work together.

Background knowledge:

Prior to this lesson, students will need to know how to assemble and take apart Brackitz components. Optional pre-activity: Read [The Gingerbread Man](#)



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35-40 minutes



Whole Class

10 minutes



Holding the Gingerbread figure, introduce our character "I have a new friend here. S/he's small but lives in our big world. Take a look - is s/he bigger or smaller than us?" Ask class to join in. "Right, this Gingerbread is smaller than us. Look around the room. What else is s/he smaller than?" (Help class think of examples). "And what is s/he bigger than?" (Help class think of examples) So, our friend is bigger than some very small things, but smaller than us. S/he could have some special situations because of her/his size. Let's make sure we really understand Gingerbread's size.

Instructor Notes and Tips

It can help to read the Gingerbread book before this class so students are primed to think about the Gingerbread character.

Focus the discussion on getting your students to compare this Gingerbread with attention to "bigger than/smaller than." If you need to suggest some comparisons for them to decide bigger than/smaller than for

Gingerbread is probably:

Bigger than: bugs, berries, pebbles

Smaller than: Puppies, bunnies, people, desks

If this isn't working, have three items that are "bigger than" and three that are "smaller than" so you can hold them up right next to your Gingerbread character!

Group Exploration

10 minutes



"In your groups you will go to four stations. At two of them you will compare Gingerbread to the size of the objects there - is Gingerbread TALLER THAN or SHORTER THAN those items?

At two of the stations you will compare width. Is Gingerbread WIDER THAN or NARROWER THAN the objects you can compare him/her to?

Give groups 2 minutes at each station and then have the whole class share their data with you. "Let's talk about the information, or data, you gathered by comparing the cutout of Gingerbread to other objects' height and width." (Make a chart on the board or big paper)

Make sure each group has a gingerbread cut-out to work with as they move from station to station. Have stations set up and ready to go and help groups understand where to start and how to know when to move stations so that every groups gets the time they need at each station

To help remind yourself and students which stations are for height and which are for width you may color code them; e.g. "stations on yellow paper are for checking HOW TALL."

Suggested items for your stations:

Taller than Gingerbread = Cups, New Pencils, Ruler, book

Shorter than Gingerbread = blocks, Crayon

Wider than Gingerbread = Notebook, stuffed toy

Narrower than Gingerbread = blocks, some snack foods (piece of cereal),



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Group Challenge

15 minutes



"Now that you are thinking about HOWTALL and HOW WIDE our Gingerbread friend is, can you use the Brackitz pieces on the tray to build a frame around Gingerbread? It should be in the shape of a rectangle and it needs to be tall enough for Gingerbread and wide enough. But not too tall or too wide - make it just big enough for Gingerbread's height and width."

Transitioning to this activity can be made smooth if you have trays or baggies of Brackitz pieces ready for each group. You may even send groups to a station each and then hand out pieces to separate them throughout the classroom.

This is a chance for students to begin building. Watch to make sure groups are able to share tasks and ideas functionally

Reflection



5 minutes



"Ok! What pieces worked best in our frames? If we want to talk about how tall the frame is, what piece tells us HOWTALL the rectangle frame needs to be for Gingerbread's height?" (have all groups point) "What piece tells us HOW WIDE the frame needs to be for Gingerbread's width?" (have all point)

"Let's add that to the data we've collected on Gingerbread's size"

Make sure that students know which part of the rectangle is related to Gingerbread's height and width, respectively. Asking them to point and then helping to revise their understanding can help them better apply this vocabulary. You can hold an upright cutout next to a frame turned the wrong way and the right way to help demonstrate.

Record the new Brackitz piece data by tracing the pieces, with orientation suggesting height and width, on the chart you made with the class earlier.

CHALLENGE ADVANCED STUDENTS

In discussion talk about the idea that saying "bigger" and "smaller" doesn't capture everything. Put a flower next to a shorter book. One of these things is taller - which one? One of these things is wider, which one? Discuss whether bigger/smaller helps describe the comparison between these two objects well enough.

In the challenge you may wish to build a frame that is too short and ask students to "fix it so it's tall enough," and then build a frame that's too narrow and "fix it so it's wide enough."

SIMPLIFY FOR YOUNGER GROUPS

In discussion: Let's take a tour around our classroom and hold this gingerbread friend up to things in our classroom - what seems smaller than the Gingerbread? What seems bigger?

In the challenge: Help get the build started by demonstrating how to use the connectors to "build corners." You could also build a rectangle frame of your own and allow students to use it as a reference.

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Our gingerbread friend:



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Student Worksheet



Trace the frame you built here:



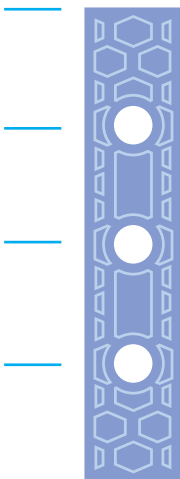
Lesson 1: **HOW BIG** in 2 Dimensions?

Student Worksheet



Trace our gingerbread friend here:

How tall is our gingerbread friend? Trace the Brackitz piece that shows how tall gingerbread is.



How wide is our creature? Trace the Brackitz piece that shows how wide gingerbread is.





Contrast:

The character we're building things for is named:

The creature is bigger than (circle any that are true):



The creature is smaller than (circle any that are true):

