Thanks for joining us early.

The webinar will start promptly at 4:00 p.m. ET

Welcome!

BECKER'S

Welcome!

BECKER'S

Before we get started…

GMA3

- **Professional Development Certificate**
  - Will be sent via email in a few days following this presentation

- **Questions**
  - This is being presented in a webinar format and we are a large group today, but you can ask questions during the presentation and we will do our best to answer them.
  - Use the ***Q & A option*** on the bottom of your screen to post a question and our team will be answering them throughout.
- **Polls**
  - There will be several polls we'd like you answer throughout the webinar so we can get to know you and what you would like to see from other programs in the future.
- **Recording**
  - A **recording** of this presentation will be made available to you after the webinar, as well as access to **step-by-step instructions** for the activities highlighted today, a **book recommendation** and a **resource list**. https://www.shopbecker.com/resource-cafe/workshops/

Slide 3

GMA3 Please double check everything on this slide.
Griffin, Matthew A, 1/5/2021

About Me

- Certified K-8 Teacher
- 15 years as a science educator at The Academy of Natural Sciences in Philadelphia, PA
- Reading Specialist with Achieve Now, a Philadelphia nonprofit providing literacy support for public school children grades K-3

Standards Alignment

- Children have a natural desire to explore, to build, and to question. Through open-ended exploration, children interact with materials in nature and scientific materials/tools to explore and learn about their world. (ECERS-3)
- Children have an innate desire to experiment and investigate while gathering data to make conclusions. (PA Early Learning Standards)
- Adults facilitate children's development of those skills that support discovery and inquiry while promoting their natural curiosity.
- Children first construct scientific knowledge by using their five senses to interact with the environment. That is how they make sense of their world. (Head Start)
- Children's immediate environment and daily surroundings provide the best context for science learning. Some ways they do this include observing, measuring, investigating, sorting, and comparing. (PA Early Learning Standards)
- Adults scaffold children's thinking by asking open-ended questions that encourage problem-solving and critical thinking. (PA Early Learning Standards)
- Young children's inclination to be curious, explore, experiment, ask questions, and develop their own theories about the world makes science an important domain for enhancing learning. (Head Start)

Science for Littles

In preschool, science is more about practicing skills and fostering a love of science than content

- **Making Observations** is the #1 skill to practice in early education
- **Asking Questions** is #2!
- Other skills that can be fostered through science instruction in the ECE classroom:
  - **Cause and Effect**
  - **Following Directions**
  - **Order of Operations**
  - **Background Knowledge Acquisition**

Poll

How often do you go outside for science lessons?

Outdoor Learning Tips

Before a Visit to the Great Outdoors:

- Visit unfamiliar areas before the lesson
- Go over the rules in the classroom before the visit
- Take note of allergies for your student before you go out
- Give advance notice to families and encourage them to send student in:
  - sturdy shoes- no flip flops
  - long pants (if you will be in an area where there will be mosquitoes and ticks)
  - hats with a brim
  - sunscreen and bugspray
- Bring water with you during warm weather

During Your Visit:

- Bring emergency numbers and first aid kit with you
- Face the sun when you stop to teach
- Stay on the trail or path
- When you look under a rock or a log always pull the it towards you and always gently replace where you found it.
- Don't pull leaves off plants or trees
- Leave no trace

After Your Visit:

- Always wash your hands after learning outdoors.
- Encourage your student's grown ups to do a bug bite/tick check at home

Finding Nature

Look up

- Make time to cloud, bug, bird watch
  - Mirror the sky on the blacktop
  - Look for nests (and help the neighborhood bird build)
  - Collect webs with spray paint
- Bring the cots and sleep mats outside for an extended nature observation session

Look down

- Explore the cracks in the city where nature comes through
  - Microhikes
  - Turn over rocks and bricks
  - If you build it, (the bugs) will come!
- Respect the dirt and bugs so that your littles respect them, too!

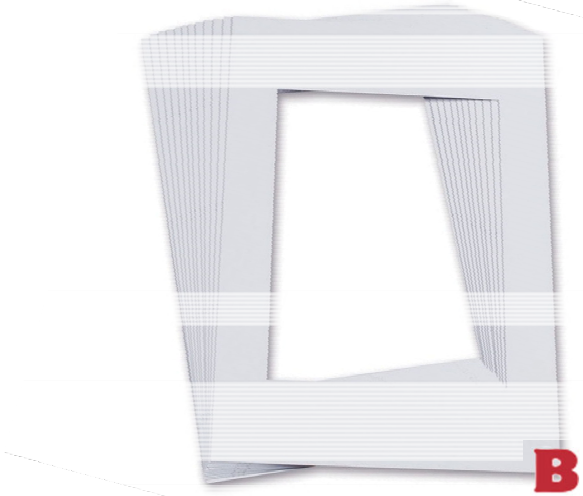
Hands on Science: Nature Viewers

Supplies

- Picture mats or DIY cardboard frames

  Any size opening between 4x6 and 8x10 can work well for this activity.

- Contact paper
- Dry Erase Markers



Hands on Science: Nature Viewers

Suggestions for Nature Frames

- I wonder…
- Nature's Rainbow
- Shapes
- Where's Water?
- Nature Tracer
- Living/Non-living
- Cloud Viewer
- Leaf ID
- Bug Tracking
- Nature Counts

Hands on Science: Nature Viewers

Poll

How likely are you to use the “Nature Viewers” activity in your classroom?

Book Break: Nonfiction Books

Uses of Nonfiction Books:

- In centers
- Small group instruction
- Send home for book lending
- Supplemental to story time

Choosing Nonfiction Books

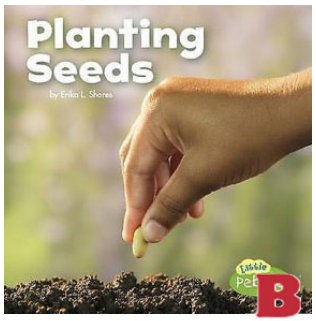
- Offer both illustrated books and books that have photographs
- Look for diagrams with arrows, numbers, timelapse images
- Provide books above reading/comprehension level- if they have good pictures!
- Errors? Just correct and tape over it!

Making the Most of Nonfiction Books

- Post-it questions
- I Spy
- Make a classroom documentary or encyclopedia
- Provide complementary images to cut, laminated images to draw on, etc.

Book Break: Nonfiction Books

Kathryn Clay



Erika L. Shores

Kathryn Clay

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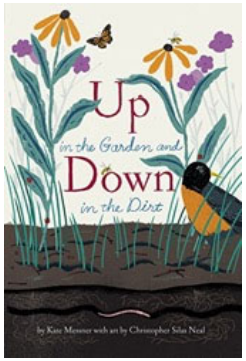
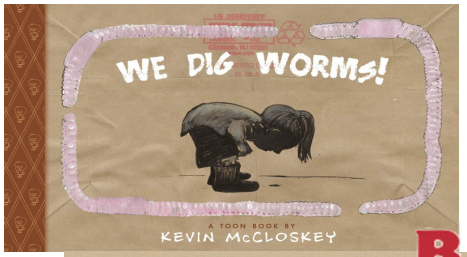
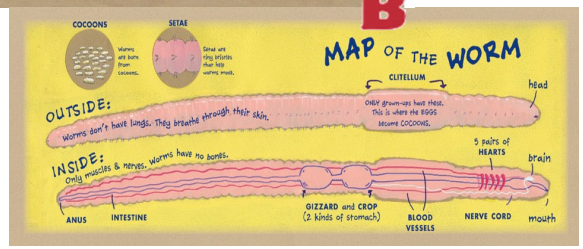
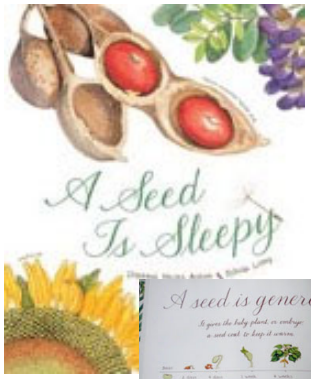


Kate Messner



Kevin McClosky





Dianna Hutts Aston

Angela DiTerlizzi

Hands on Science: Buggin' Out

Poll

Have you ever brought bugs
into your classroom (on purpose)?

Hands on Science: Buggin' Out

Why have live animals in the classroom?

- Up close look at living creatures and exposure to biodiversity
- Bonds with live animals can have a positive impact
- Encourage conservation attitudes

Bugs might be a good addition to your classroom if:

- You want a class pet but don't have a lot of time and money for cages and animal care
- You want students to observe life cycles
- *Some* species can be released

Hands on Science: Buggin' Out

Keeping Critters Happy

Caterpillars/Butterflies

- A good choice if you don't want to handle or have very close contact with the insects.
- Follow the directions that come with the kit carefully- especially placement of the habitat
- If it does not come with a butterfly feeder/waterer, you can make one from sponges and rocks in a plastic lid (this is also a good option for wild butterflies!)

Mealworms/Beetles

- A good choice if you want an insect that students can hold and experiment with
- Their habitat and food needs are minimal- easy to care for
- They CANNOT be released and will continue to live year-round as a colony (not super mealworms)
- If you have other live animals (bird/lizard/fish) they can be food for your other critters

Hands on Science: Buggin' Out

Compost in the Classroom

Composting in the Classroom:

- Can be any size- from a coffee ground container to a storage bin
- Can be done inside or outside
- Can be successful with or without worms- but worms make it quicker and more fun!
- Can be combined with growing plants in the classroom or on the playground
- Can be an at-home, family project

Composting Tips:

- Be sure not to "overfeed" your compost
- Keep an eye on unwanted visitors to your compost
- If you don't have worms, you need to mix your compost regularly
- Never put meat or sugar (outside of fruit) in your compost
- Start with brown ingredients (paper, dried leaves, straw) and regularly add small amounts of green ingredients (kitchen scraps, grass, plant matter)

Hands on Science: Buggin' Out

Creepy Crawly Connections

Snack like a Bug

- Punch holes in fresh leaves with a hole punch
- Use eye droppers, straws, pipettes and basters to "drink" like a butterfly (add color to the water and make watercolor butterfly lunch art)

Egg Exploration

- Tapioca makes a great sticky butterfly egg- add some green food coloring
- Challenge students to "hide" the tapioca on leaves

Buggy Yoga

- Curl up and stay still like an egg, crawl like a larva, wiggle like a pupa and pose like a full-grown bug

Hands on Science: Buggin' Out

Poll

How likely are you to raise bugs in your classroom after today?

Book Break: Fiction Books

Books don't have to be factual to be impactful!

Fiction in ECE science instruction can help students to:

- Contextualize complex scientific ideas
- Think critically about real vs. imaginary
- Build emotional connections to content

Choosing Science-Centered Fiction Books

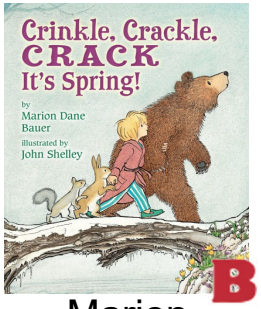
- A realistic setting and plot are more helpful than realistic characters
- Look for books in which characters are curious, search for solutions through experimentation or research, or have one idea about something and change their minds when presented with evidence
- Pick books that are fun (and sometimes ridiculous!)

Making the Most of Fiction Books

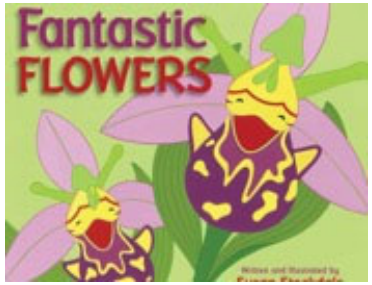
- Pair with nonfiction books on similar topics
- Change the setting, change the story
- Questions, questions, questions!

Book Break: Fiction Books

Will Hillenbrand

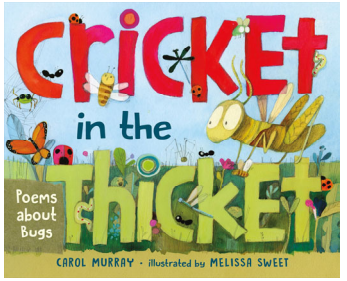


Marion Dane Bauer

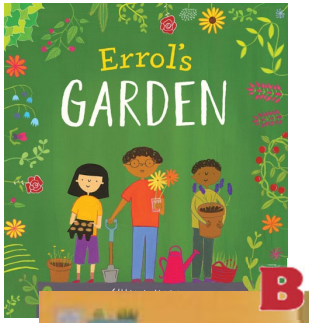


Susan Stockdale

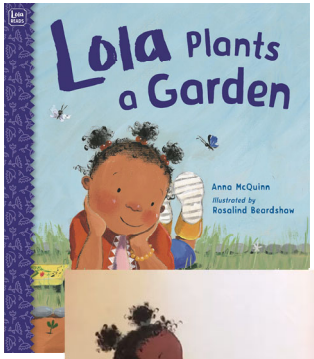
Evan Kuhlman

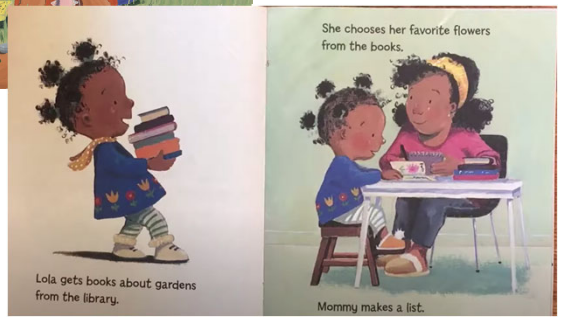


Carol Murray

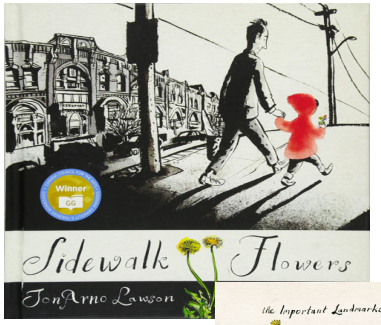


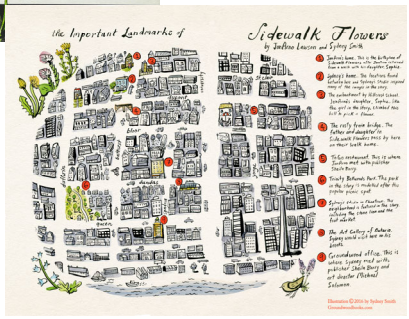
Gillian Hibbs





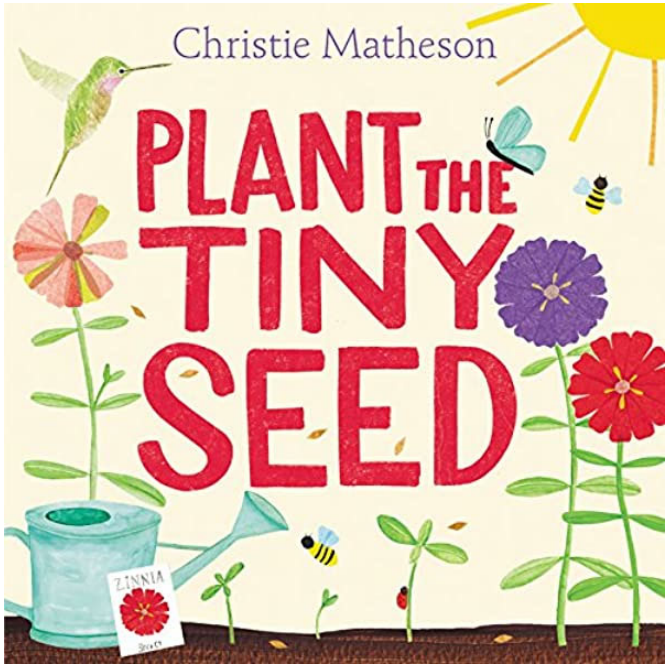
Anna McQuinn



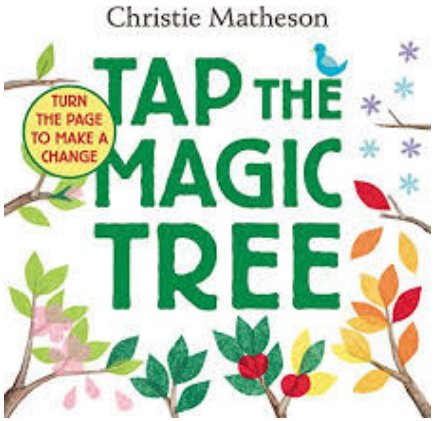


JonArno Lawson

Book Break: Interactive Books



Christie Matheson



Hands on Science: The Dirt on Dirt!

Dissecting Dirt

Soil is made up of:

Rock/minerals

- **Most of the "dirt" you see including sand and clay. About 45% of healthy soil**
  Add pebbles and bigger rocks if your sample doesn't have an observable amount

Air

- **About 25% of healthy soil. If soil is extremely compacted, it's not great for plants- animals moving through the soil is the best way for air to get in!**
  To observe air in the soil, move the particles around and ask the students to guess what is between all the "stuff" they can see.

Water

- **About 25% of healthy soil.**
  To observe water in the soil, students should use their sense of touch. Add water with a spray bottle before the observation.

Humus

- **All of the formally living "stuff" in soil- leaves, animal droppings, organic material About 5% of healthy soil.**
  Add bigger pieces of leaves, roots, sticks if your sample doesn't have an observable amount

Hands on Science: The Dirt on Dirt!

Dirt Experiments

Dirt Comparisons

- Gather sand (add some kinetic sand too!), potting soil, topsoil, etc.
  - Weigh each sample
  - Look at each with a magnifying glass
  - Add drops of water to each
  - Fill a mason jar half full with each sample, and then fill with water.
    - Shake them up and keep watching.
- Be careful with packaged soil containing fertilizer- do not allow students to handle!

Mud!

- Measure and observe
- Paint and build
- Imagine and play
- Freeze and decorate

Hands on Science: The Dirt on Dirt!

Mess-free (*sort of*) Dirt Discovery

+

Rocks/Minerals

Humus

+

Hands on Science: The Dirt on Dirt!

Poll

How likely are you to use these
“The Dirt on Dirt!” activities in your classroom?

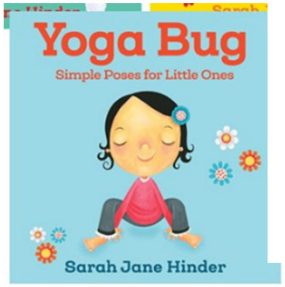
Vist ShopBecker.com

2

Natural Treasure Set

Ladybug Land

Butterfly Garden



Play Dirt

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Slide 28

2 This can be where those products are highlighted (magnifying glasses, pinecones, all that great stuff)
Griffin, Matthew A, 10/12/2020

Included in **Seasonal Science Book Set**
BSS191920

Kathryn Clay

Erika L. Shores

Kathryn Clay

Will Hillenbrand

Marion Dane Bauer

See Other Spring-themed books sets at ShopBecker.com

Insects & Spiders	BSS202199
Gardens	BSS711840
Trees	BSS201855

Slide 29

3 I can't remember what was said on this slide?
Griffin, Matthew A, 3/3/2021

7 I'll figure it out and update it
Couldn't load user, 3/3/2021

Remember the Kitchen Science Webinar?

New!

Hollie's Kitchen Science Set

BSS111919

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seasonalscience

Thanks for joining us!

Save the Date!

Seasonal Science: Summer
May 20

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