



JOURNEY IN... YEAR ONE ENDINGS SCIENCE

This lesson's Big Ideas:

- Change—a mix of beginnings and endings—is an inevitable part of existing in this universe.
- Change brings big feelings: sometimes it feels good, sometimes it's painful.
- Change is necessary for growth.

Lesson Materials

- A frozen, colored ice cube the size of a yogurt cup or so
- A bowl
- Image flashcards (cut from magazines and mounted on construction paper) for the "Continuum of Longevity"
- Apples cut into quarters
- An apple tree seedling or sapling
- A decaying log
- A worm bin!
- Magnifying glasses
- Gloves (gardening or latex are okay—check for allergies.)

TEACHER REFLECTION AND PREPARATION

🕒 Ahead of time

When I was green, everyone loved me. Bees crooned my sweetness: butterflies made me their own. But then something called time began to drag me away and I became curled up and brittle and brown.

These lines you read are what an oak leaf wrote, following a storm that dragged it over the snow—complaining and kicking. "I don't want to forsake my tree. Help! Where did my sisters go?"

When spring comes, a whole new cast will have the stage and I will huddle where winter threw me away, but wherever I am the soil will be bitter because I remember how lonely it was when I tried to stay.

This farewell comes from a forgiving leaf that skipped with the others and then found a lucky storm that brought me here. Listen—hold on as long as you can, then thrust forth: make truth your home.

— William Stafford

One day as I was about to step on a dry leaf, I saw the leaf in the ultimate dimension. I saw that it was not really dead, but that it was merging with the moist soil in order to appear on the tree the following spring in another form. I smiled at the leaf and said, "You are pretending." Everything is pretending to be born and pretending to die, including that leaf.

— Thich Nhat Hanh

TIPS FOR A SUCCESSFUL LESSON

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To every thing there is a season,
and a time to every purpose under the heaven:
A time to be born and a time to die;
A time to plant and a time to reap;
A time to kill and a time to heal;
A time to destroy and a time to rebuild;
A time to cry and a time to laugh;
A time to mourn and a time to dance;
A time to cast away stones and
a time to gather stones together;
A time to embrace and a time to refrain from embracing;
A time to get and a time to lose;
A time to keep and a time to cast away;
A time to rend and a time to sew;
A time to be quiet and a time to speak;
A time to love and a time to hate;
A time of war and a time of peace.
- Ecclesiastes 3:1-8

YOUR FIELD EXPERIENCES: FEEDBACK AND NOTES

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GATHERING AND FOCUSING

🕒 2-3 minutes

Ask the kids some questions about their knowledge of the world in which they live:

- Is there anything in the universe that is permanent? Why or why not?
- What changes have to happen for kids to survive and grow up? Are our bodies changing? How about our minds? Our families?
- Are there changes that can be undone? Name some.
- Are there changes that can never be undone? What are some?
- (for 5th and 6th graders) Does anyone know the difference between a chemical and a physical change? Which is more likely to be permanent?
- How do most human being respond to change?

PRIMARY ACTIVITY ONE

THE ICE CUBE SET-UP

🕒 5 minutes or so

Put a big, bright, solidly frozen ice cube (made from freezing colored water in a butter or yogurt container) in a bowl and set the bowl in a spot that will be visible to the kids during class but out of the way enough to carry on other activities. You're going to use the ice cube as a metaphor for change that will take the duration of the class period. You'll ask the wondering questions together at the end of class. Start with these questions, recording summaries of the kids' ideas on the board for later.

- Who knows the three forms into which water changes during the water cycle? (liquid/water, solid/ice, gas/water vapor)?
- What change is going to happen to the ice cube during our class time together? Why? How?
- I wonder if the ice cube will be totally changed into water by the end of class? Halfway melted? Only a little melted? Who wants to make a bet?
- How did you decide what to bet?

Let's check in on the ice cube at the end of class...

PRIMARY ACTIVITY TWO

CONTINUUM OF LONGEVITY

🕒 10 minutes or so

- Using visual flashcards of a variety of living things and material objects, ask the kids to work as a team to come up with a 'continuum of longevity'. A continuum is a way of organizing things logically in a line, having things near one end possess a certain quality and things near the opposite end have the opposite quality. We'll be organizing flashcards from "Things That Only Last A While" (or "Things That Change Quickly") to "Things That Last A Long Time" (or "Things that Change Slowly"). Flashcards might include snowflakes, human babies, mountains, plastic jugs, tulips, elephants...just about anything works. For clarity's sake, you might want to label the images.
- Remind the kids that UUs value the democratic process. It's important that everyone has a voice in this decision-making process and that no one is excluded or ridiculed for their ideas.
- Select a recorder for each class, asking that child to write down or help the adult write down the final order on which the group has decided.
- Select a presenter, who will explain the final order to the teacher and guide.
- After the group has presented, let them read last's week's list or the lists from earlier weeks, if this isn't the first class to do the Science workshop during the cycle.

Wondering Together

- I wonder where you'd place kids like you on this continuum? Are you okay with that spot?
- What would it be like if we had longer life spans? What if snowflakes lasted longer? Or if mountains changed more quickly?
- What are some of the forces that change things? How could this item in this photo be changed?
- How is your life changing? What are some of the forces at work in your life?

PRIMARY ACTIVITY THREE

COMPOST HAPPENS!

🕒 20 minutes

- We'll explore an apple tree's life cycle together with a focus on the changes that happen during composting. Give each child
 - a magnifying glass
 - some gloves
 - a quarter slice of an apple, including seeds
- Start with a few apple seeds taken from the freshly cut apple. Invite the kids to explore them with magnifying glasses. Then check out the sapling, then the rotting log and apples in the worm bin. Through the process, ask questions like the following:

About the apples

- What is inside this apple seed? Can you see a tree in there? How does it hold the idea for an apple tree? If you had never seen one before, would you guess that it would turn into a big apple tree?
- What kind of changes have to happen for this seed to start to grow?
- How does a seed know how and when to change into a tree?
- What would happen if apple seeds stayed apple seeds forever? Or acorns?
- What if kids stayed kids forever?

About the tree

- How is this sapling changing? How will it change in the future? What will cause it to change? Can it choose to stop growing? Can we humans choose to stop growing?
- How long do you think this apple tree will live? What might happen to shorten its life?

About the compost

- What is happening to this log and last week's apples? Why?
- Are the worms necessary? Do they help? How?
- Do kids sometimes need help changing?
- Ask the kids if their families compost. Why?
- What would happen if every apple core and log went in a landfill?
- Does everything have a life cycle?
- How does change fit into being alive in this universe?

GATHERING AND REFLECTING

🕒 5 minutes

Check in with the ice cube.

- Was anyone right about how much it changed during our class?
- How much is still ice like it was? How much water is there now?
- How much are you going to change during the next year? What kind of changes do you know will happen?
- How do you feel about change?

Read *Our Family Tree: An Evolution Story* if you have extra time to fill.

CLOSING AND LEAVE-TAKING

🕒 2 minutes

Gather in a circle, take each other's hands and speak these words:

Just as the seed holds the beauty that the flower later shares,
and just as the acorn holds the strength that the tree later provides,
we, too, hold in our hearts the growth of our many gifts.

May we offer our gifts to each other and everyone.

Let's change the world with our kindness,

let's bless each other with compassion,

and let's grow, with all things, in love.

Amen.

- Bill Neely