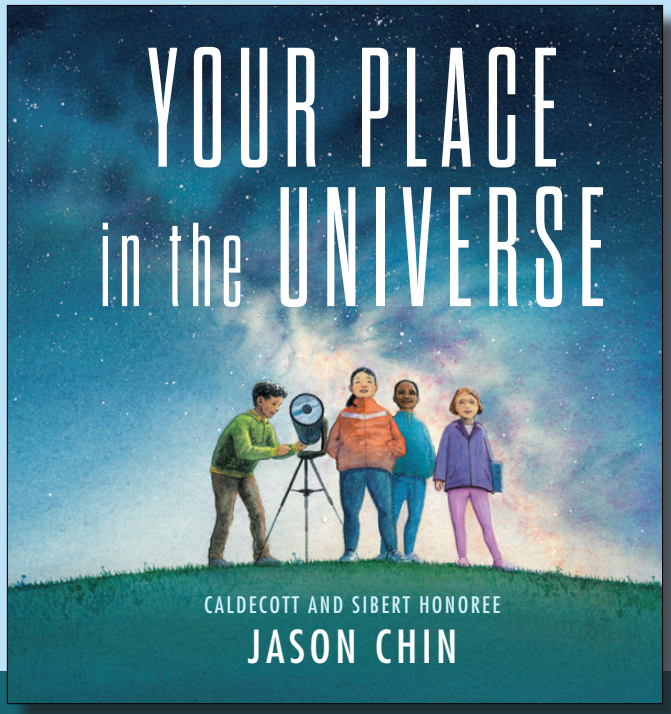
YOUR PLACE in the UNIVERSE
EVENT KIT

by Jason Chin



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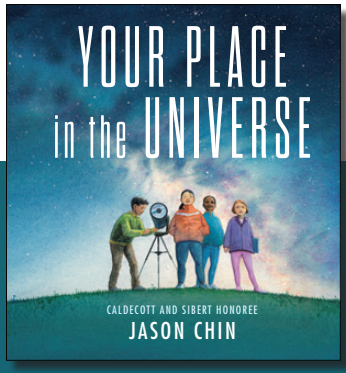
A note from Jason Chin

Thinking about the size of the universe often makes me feel small. After all, there are billions of galaxies, each with billions of stars, many of which have planets orbiting them. We humans are just small animals, living on a small planet, with a thin blanket of air protecting us from the cold of space. I feel like an insignificant speck among all those stars and galaxies, until I remember how special it is that we are here and that we can imagine our place among all those stars. In all the universe, Earth is the only place that we know has life; and of all the living things we know of, humankind is the only species that understands the vastness of space. We can hold the cosmos in our minds, and we've begun to understand our place in it. That is very special, and although we are small, we are not at all insignificant.

The illustrations in this book are intended to show the scale of objects and distances on Earth and in the universe, and each illustration is drawn to scale. I have, however, taken liberties in the depictions of the solar system and beyond to better convey the structure of the cosmos. The dots indicating planets, and the textures indicating the asteroid belt and Kuiper belt have been added. At this scale no planets, comets, or asteroids would be visible. The images of the Milky Way and beyond are artisitc interpretations, as direct observation of these scenes is impossible. My image of the Milky Way is based on photographs of galaxies with similar characteristics to ours. The images of our galactic neighborhood show only approximate locations of galaxies. The illustrations of the cosmic web and the observable universe show the pattern of galaxy distribution in space, but do not represent actual galaxies. They are based on computer models and renderings of redshift surveys such as the Sloan Digital Sky Survey.

—Jason Chin



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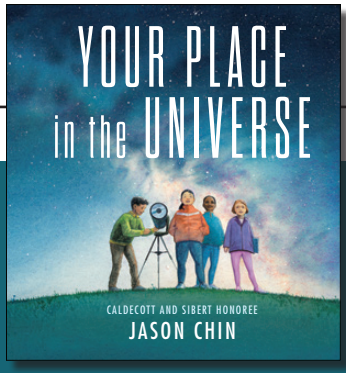
Draw the Tallest Thing You Can See!

Look up!



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How Many Pencils Activity Sheet

How Many?

The average eight-year-old is about five times as tall as a copy of the book *Your Place in the Universe* . . . but only half as tall as an ostrich. And an ostrich is half as tall as a giraffe, which is one twentieth as tall as a California redwood tree! How do redwood trees compare to the tallest buildings? To Mount Everest? To planets, stars, galaxy clusters . . . and the universe?

Let's start right where you are! Grab some pencils, a book, a ruler, and let's go!

How many inches is your pencil? _____

How many pencils equal the size of your book? _____

How many inches is your book? _____

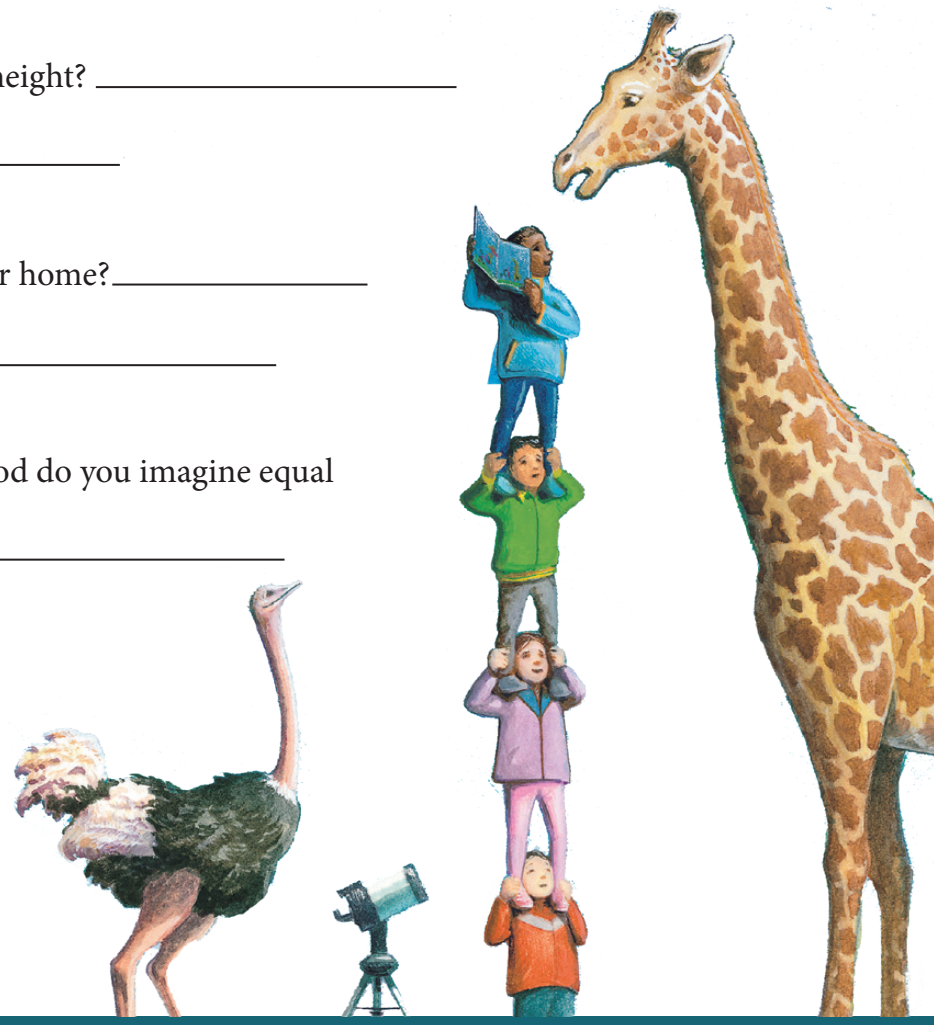
How many of those books equal your height? _____

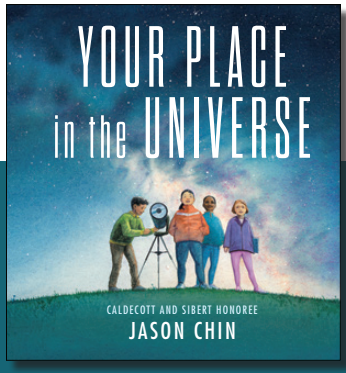
What is your height? _____

How many of you equal the size of your home? _____

What about your school or library? _____

How many homes in your neighborhood do you imagine equal the tallest building you've ever seen? _____





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Drawing Facts with Jason Chin

Watch Jason's video to follow along!

Available at HolidayHouse.com/Your-Place-in-the-Universe

Method:

- Pick a fact.
- Learn more.
- Ask questions.
- Find reference.
- Use imagination.
- Envision a picture that shows the fact.
- Draw!

Tips:

- There's no right or wrong way to draw.
- Look for ways to make your picture fun.
- What can you add to the picture that isn't what you learned?
- Don't forget that the picture should describe the fact.

Here's an Example of How to Draw to Scale!

Fact: Adult giraffes are 14–19 feet tall (nationalgeographic.com). Females average 14 feet, males average 17 feet. Our goal is to make a picture that explains the size of this amazing animal.

Learn More: The first thing to do is try to envision the size by asking questions and using your imagination.

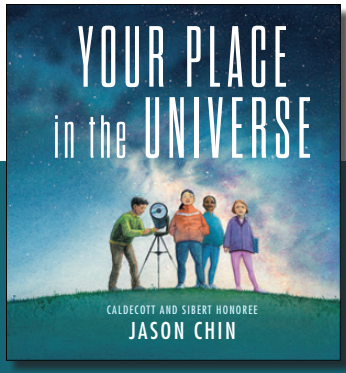
What else is 14 feet tall? 19 feet?
A tree? A house? One story is about 10 feet, so taller than a one story house?
How many of you would make 14 feet? 17 feet?
I am 5.66 feet tall, so that would mean 3 times my size is 17 feet tall.
How many of [pick an object] would make 14 feet?
A basketball is 0.8 feet.
18 basketballs = about 14 feet

Did anything spark an idea for an image?

What about a drawing of a giraffe and a tree?
A giraffe and a stack of basketballs?
A giraffe and a drawing of you?

Now it's time to draw!

Don't forget to get references, measure out the scale, and have fun!



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