

THRESHOLDS 1–4 GRAPHIC TRANSCRIPT

Purpose

Improve your listening skills while also learning about Big History’s first four thresholds of increasing complexity.

Process

1. As you listen to the audio, fill in the missing information in the graphic transcript.

Thresholds 1–4

Today, we’re going to take a journey through time to explore how our **Universe** and planet Earth came to be. It’s a story that begins billions of years ago with an incredible event called the **Big Bang**.

Threshold 1: _____



Imagine a Universe so small it could fit in the palm of your hand. Then, _____ ago, something amazing happened: the Big Bang! Scientists are still trying to understand exactly what caused it, but it was like a giant explosion that created everything we know: _____, _____, _____, and _____. It’s hard to wrap our heads around, but in the blink of an eye, the Universe went from tiny to enormous!

Threshold 2: _____

At first, the Universe was incredibly _____. It was just a vast, empty space filled with simple **atoms** like _____ and _____. But _____, the force that pulls things together, started to work its magic. Over millions of years, these atoms clumped together into massive clouds. As the clouds grew bigger, the atoms squeezed closer and closer, increasing the _____ of the cloud. Eventually, the cloud got so hot that atoms fused, forming the very first _____! Imagine a dark room suddenly



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bursting with light—that's what it was like when the stars were born! These stars were like giant furnaces, burning brightly and releasing enormous amounts of _____ into space for billions of years.

Threshold 3: _____

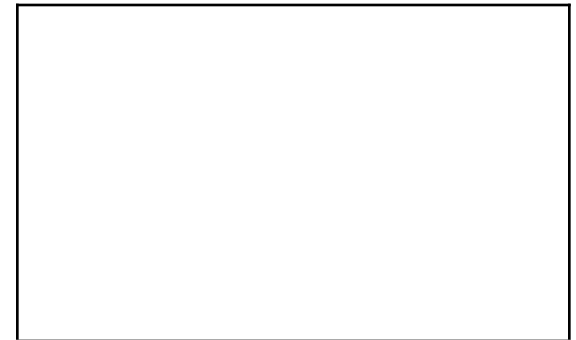


Stars aren't just beautiful; they're also incredible _____ factories! The _____ and _____ deep inside stars created the perfect conditions for new chemical elements to form. Think of it like baking a cake: You mix simple ingredients like flour and sugar, and with heat, they transform into something new and delicious. In stars, the "ingredients" were simple _____, and the "heat" in the star's core was incredibly intense. These new elements—like carbon, oxygen, and iron—are the building blocks of everything around us, including you and me! But how did these elements get out of the stars?

Well, all stars die at some point and release these elements. But some stars end their lives in huge explosions called _____. These explosions are so powerful that they scatter the newly formed elements throughout the Universe—kind of like cosmic confetti exploding into space. Sometimes other dying stars like _____, collide and create even heavier elements—the ones toward the bottom of the periodic table—like gold and platinum!

Threshold 4: _____

Now, imagine a giant cloud of _____ and _____, enriched with these newly formed elements, floating in space. _____, our trusted friend, pulled this cloud together, causing it to spin and collapse like someone tossing pizza dough in the air. As the cloud collapsed, it got hotter and denser, eventually forming our _____ at the center. Around the Sun, smaller clumps of dust and gas came together, forming the _____, including our very own Earth! This all happened about _____ years ago.



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Conclusion

From a tiny point in the _____ to the formation of _____, our Universe has gone through incredible changes, increasing in _____ with every step. Gravity, stars, and even supernovas have all played crucial roles in creating the world we know. It's an amazing story that reminds us that we are all connected to the vastness of the Universe, made from the very elements forged in the _____ billions of years ago.

2. In the blank boxes in the graphic transcript above, draw an illustration for each threshold.

3. Now, go back and reread the transcript you just completed to practice some note-taking skills.

- Circle three words that are new to you. (If you already know all the words, pick three that you don't use often.) Write them down below, and then look up their definitions.

Words that are new to me	Definition

4. Use the transcript to find the answers to the following questions. Put a star (★) next to where you find the answer in the transcript:

- What force played a role in bringing together the clouds of dust to create stars and, later, planets?
- When a star dies in a huge explosion, what is it called?
- What happened around 4.5 billion years ago?

5. Underline or highlight two sentences that you found interesting or surprising. For each sentence, explain why you found it interesting or surprising.

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One of the sentences I underlined interested/surprised me because ...	
The other sentence I underlined interested or surprised me because ...	