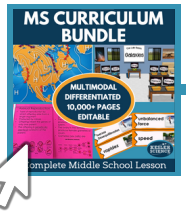
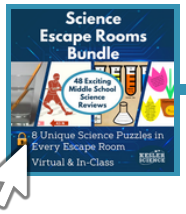
What Can Kesler Science Do for You?

4th - 8th grade science teachers love our Life, Earth, and Physical Science materials! With these easy and engaging materials, teachers can save planning time and put their focus back on the teaching that really matters.



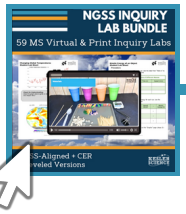
5E LESSONS

Two-week lessons with over 100 topics



ESCAPE ROOMS

Engaging activities for review

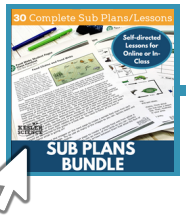


INQUIRY LABS

Three different levels to fit every student

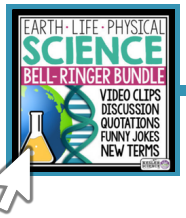
AMAZING ANCHORS

Anchoring phenomenon to book-end your lessons



SUB PLANS

Never worry about planning for a sub again.



WARM-UPS

Bellringers for the entire year

STATION LABS

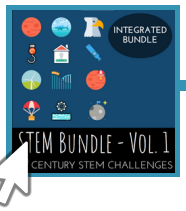
Student-led exploration

INTERACTIVE NOTEBOOKS

Bring science journals to life.

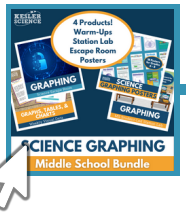
WIKI TICKETS

Quick formative assessments



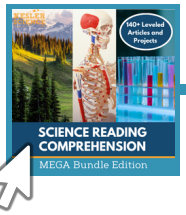
STEM CHALLENGES

Real-world STEM problem-solving



GRAPHING

Table and charts and graphs ... OH MY!

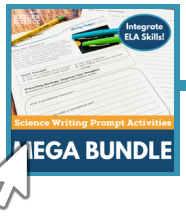


SCIENCE READING COMPREHENSION

Leveled reading passages with mini-activities

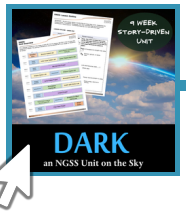
SPANGLER COLLABORATION

Exclusive Steve Spangler lessons and videos



WRITING PROMPTS

Writing activities covering 100+ topics



EXPLORIES

Story-driven units with integrated activities

The Kesler Science Professional Learning Network (PLN) group on Facebook has a huge community of engaged and supportive science teachers - come join us!

KESLER SCIENCE

Name: _____

Date: _____

Body Heat That Powers Tech?

If you had unlimited access to your phone all day, how many times do you think you would check it? A study last year found that the average American checks their phone 144 times a day - and that includes students and people with jobs who can't look at their phones whenever they want! 😮

With that much use, keeping our phones charged can be a challenge. It's easier when you're near electrical outlets, but what about spending the day at a beach or going camping? What do you do when you're far from anywhere to plug in a charger?

Recently, a group of scientists may have found an answer - they're using your body heat as the ultimate portable charger! This breakthrough in technology is called a "flexible thermoelectric device."

This isn't a new concept; scientists know that when one side of a conductive material is warmer than the other, electrons start to move towards the cooler end. This movement can be harnessed to power devices.

The problem? This process is *really* inefficient. A few years ago, there was a t-shirt prototype that could charge a small LED light, but you had to go for a run to make it work. (Hard pass. 😂) Other examples were bulky, expensive, or relied on toxic materials like tellurium to work.

With the flexible thermoelectric device, scientists fixed many of those problems. They used super-thin sheet of nano crystals to create a more flexible and effective body heat generator.

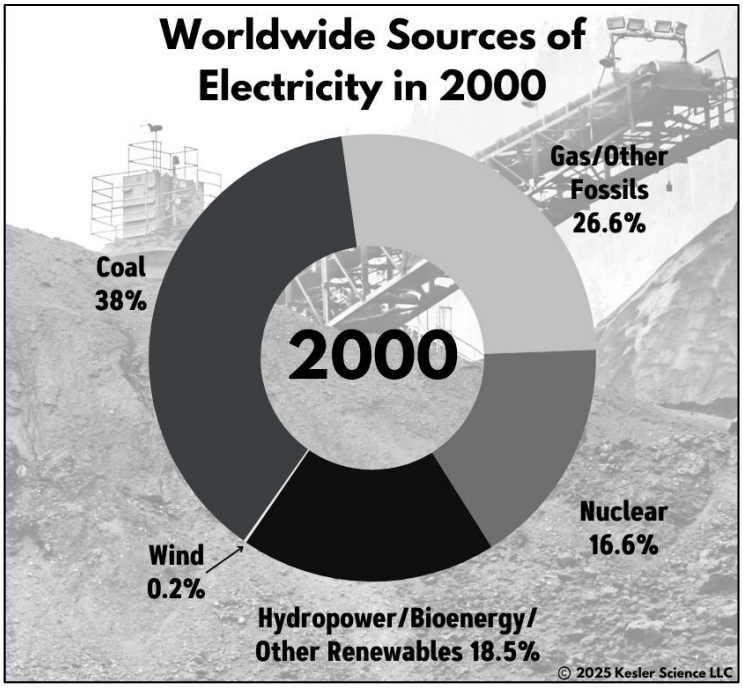
And it doesn't stop with phone chargers. The science community is already brainstorming other ways to use this tech. It could:

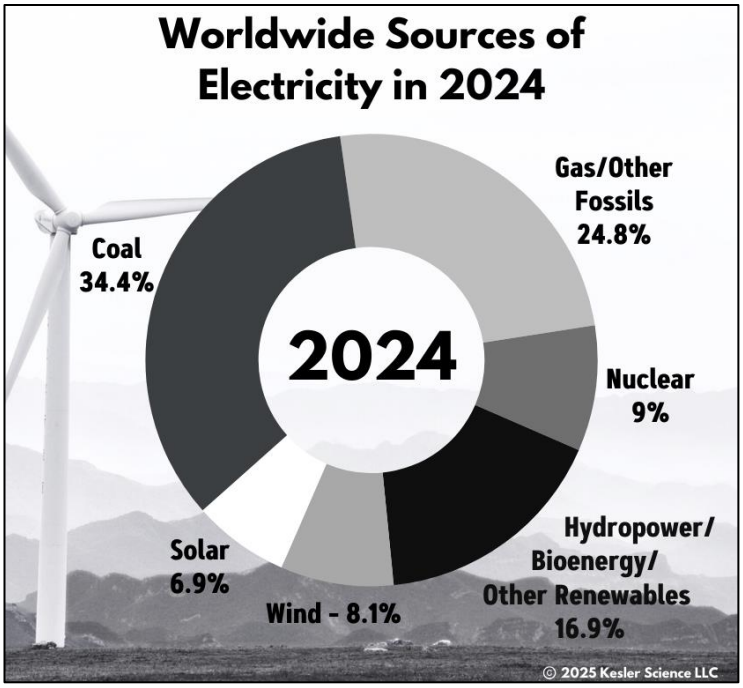
- Prevent computers from overheating so they run faster (a huge win).
- Capture waste heat from factories and machines, turning it into a sustainable energy source.
- And here's my personal favorite: **wearable tech that can heat you up or cool you down.** Imagine having your own personal AC unit on a Texas summer day. I'd sign up for that yesterday.

It's so cool to imagine how these breakthroughs in science could transform everyday life. Maybe in a few years, we'll all be charging our devices as we walk around in our wearable climate control!

Looking into using body heat as an energy source got me thinking about other forms of alternate energy. The graphs on the next page show changes in how we produce electricity over the last 20 years:

Body Heat That Powers Tech?





1. How has the use of coal changed according to this graph?

_____

_____

_____

2. Which renewable energy sources have increased between the years 2000 and 2024?

_____

_____

_____

3. Which energy sources have decreased since the year 2000?

_____

_____

_____

Blog Link: https://blog.keslerscience.com/phenomenon-and-graphing/body-heat-powered-tech

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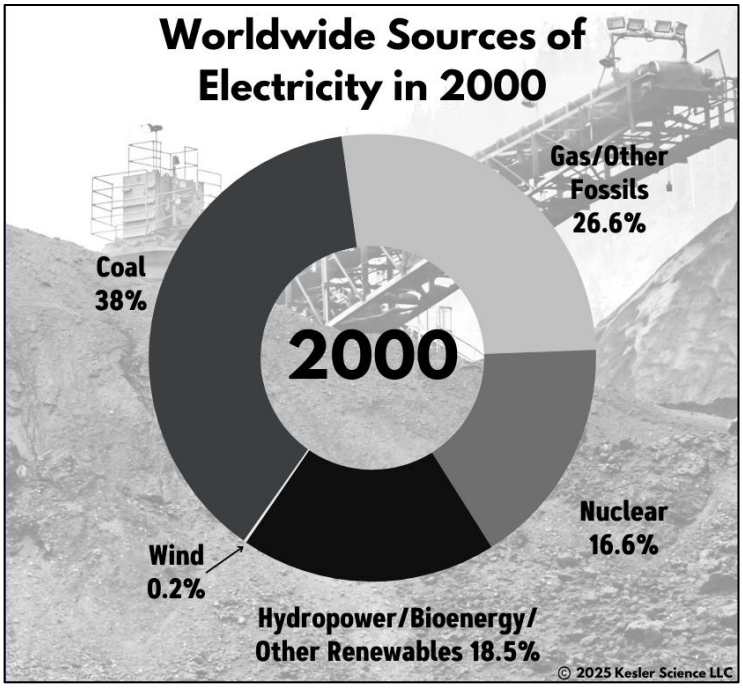
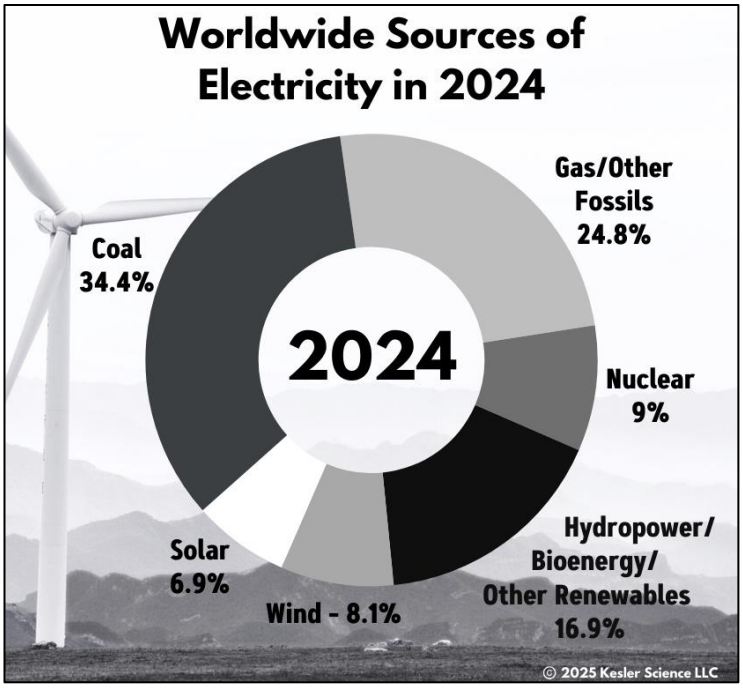
Weekly Phenomenon
Graphing Activity
Teacher Key

Body Heat That Powers Tech?





1. How has the use of coal changed according to this graph?

   In the year 2000, about 38% of the world's energy was derived from coal. A small decrease in the use of this fossil fuel has taken place, and about 34% of our energy still came from coal in 2024.

2. Which renewable energy sources have increased between the years 2000 and 2024?

   Solar energy use has increased from 0% to about 7%, and wind energy has increased from 0.2% to about 8%.

3. Which energy sources have decreased since the year 2000?

   Coal use and gas use have decreased slightly since the year 2000. Nuclear energy appears to have decreased the most, from about 17% in 2000 to less than 10% in 2024.