

Space Science Data Analysis Graphing Bundle HIGH SCHOOL

THREE Graphing Activities

NO PREP - Just
download and Go!

Students use Real
World Data to create
different graphs and
answer questions
about **Moon Phases,**
Planetary Motion, and
Star Properties.

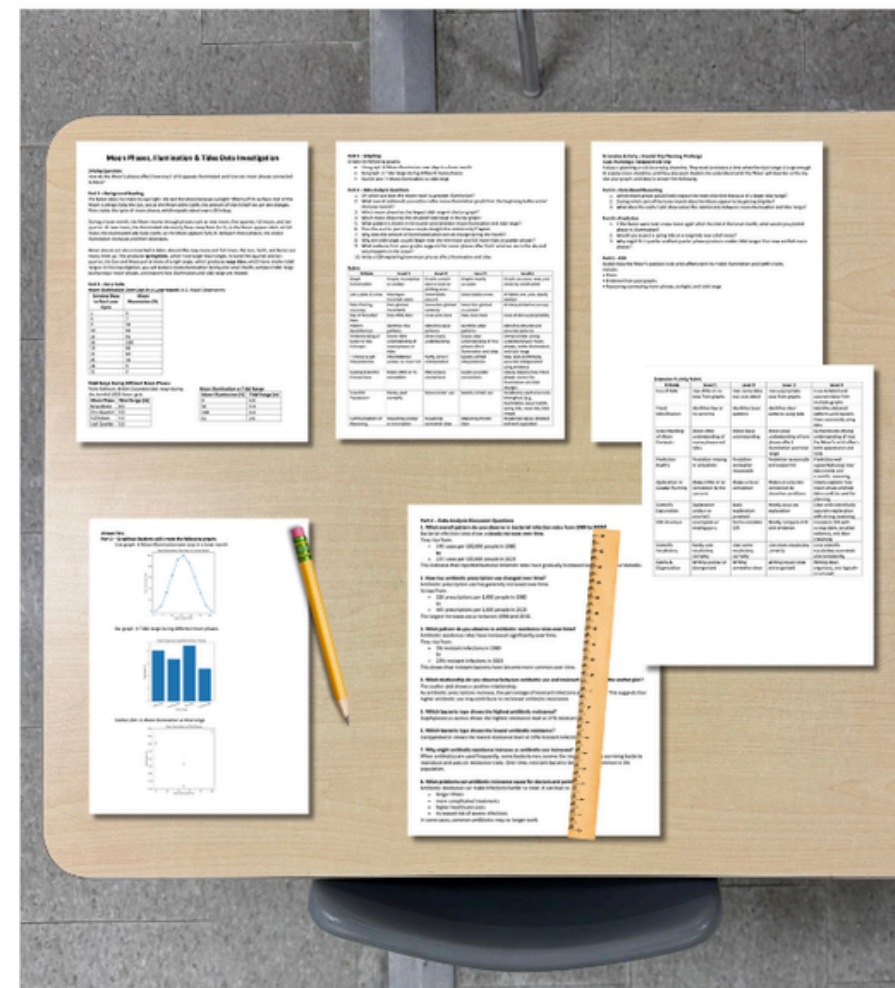
SCROLL
to take a look inside!



HOW THESE ACTIVITIES HELP YOU

- **Saves Prep Time** - Everything is pre-made, ready to go, and fully editable.
- **Provides Built-In Assessments** - The rubric let you quickly check for understanding.
- **Encourages evidence-based reasoning** by having students use graphs to explain how and why trends and changes occur

LUNAR PHASES, APPARENT ILLUMINATION & TIDAL RANGE

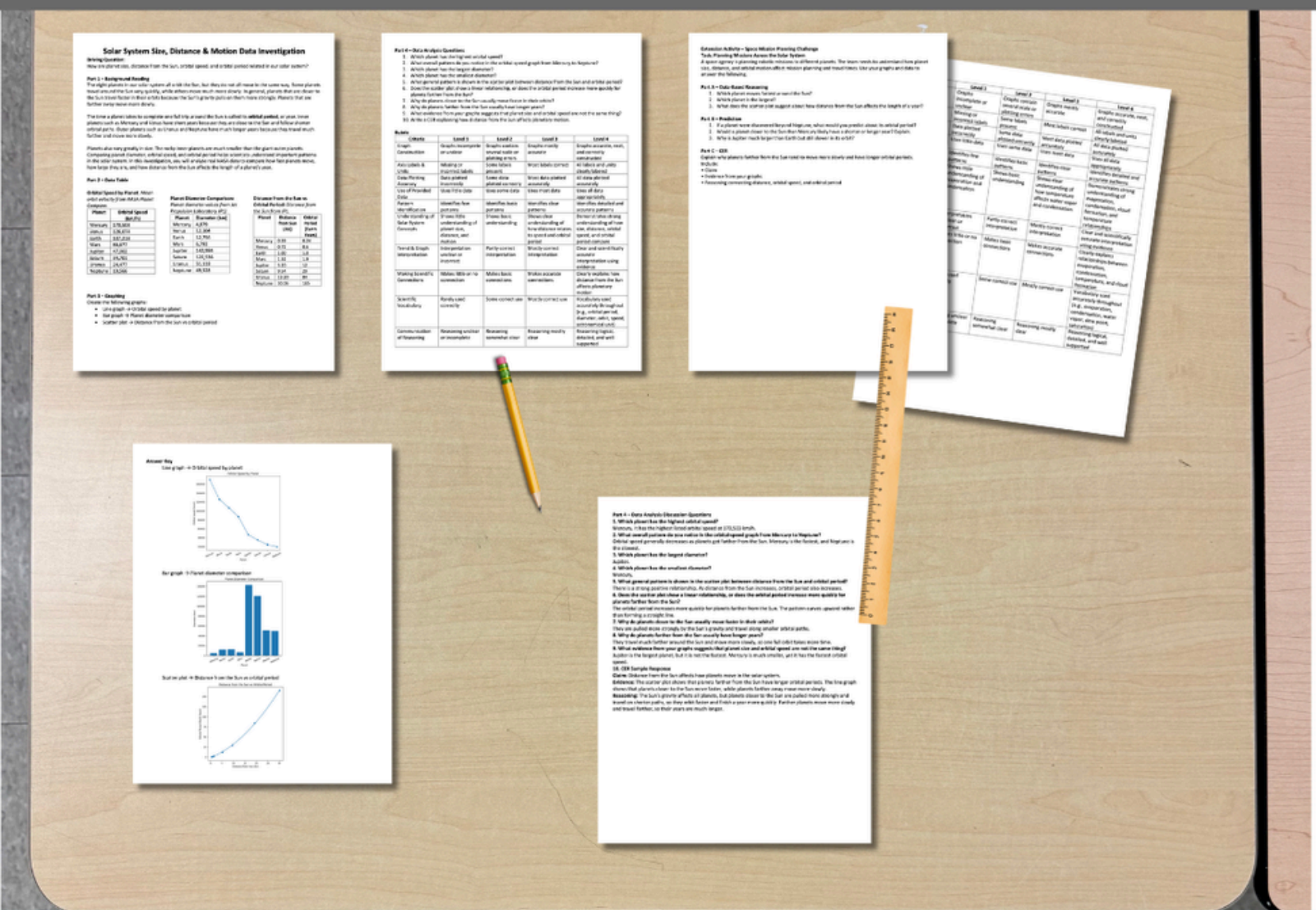


- Background Reading
- Data Tables
- Students Create Different Graph Types
- Extension Activity
- Full Marking Rubric

NO PREP or Materials

What Will Your Students Learn?

PLANETARY MOTION, ORBITAL PERIODS & SOLAR SYSTEM SCALE



Students Use Their Graphs to Answer Questions and Draw a Conclusion

- ✓ Planet size and diameter comparison
- ✓ Orbital speed by planet
- ✓ Distance from the Sun and orbital period
- ✓ Patterns in planetary motion
- ✓ Moon phases during a lunar cycle
- ✓ Changes in moon illumination over time
- ✓ Spring tides and neap tides
- ✓ How moon phases affect tidal range
- ✓ Surface temperature of stars
- ✓ Absolute magnitude and stellar brightness
- ✓ Temperature and brightness patterns in stars
- ✓ Real-world applications of astronomy and space science

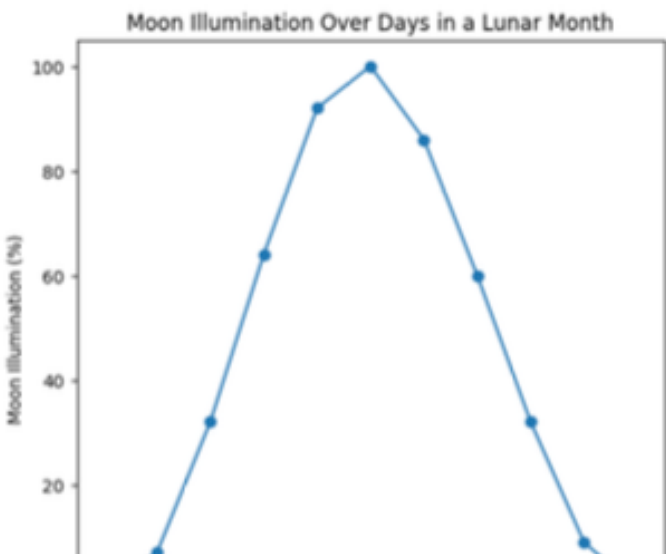
Classroom Fit Guarantee

I want you to feel confident when you purchase from Teach With Fergy. If a resource is not the right fit for your students, simply contact me and I'll provide double your purchase amount in store credit toward another resource in my store.



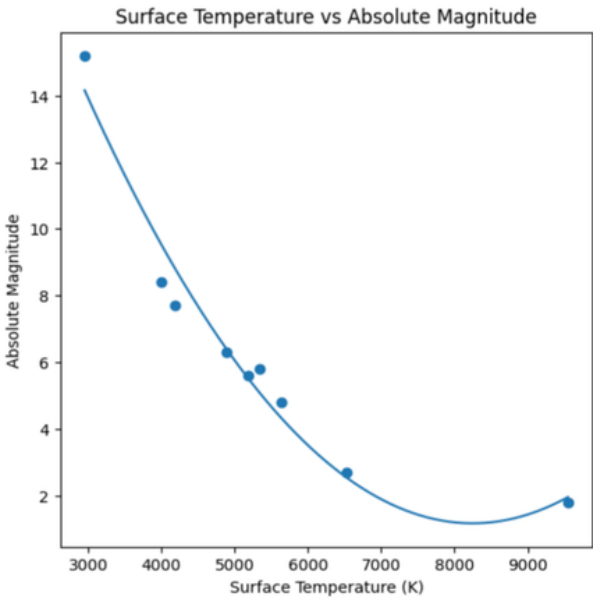
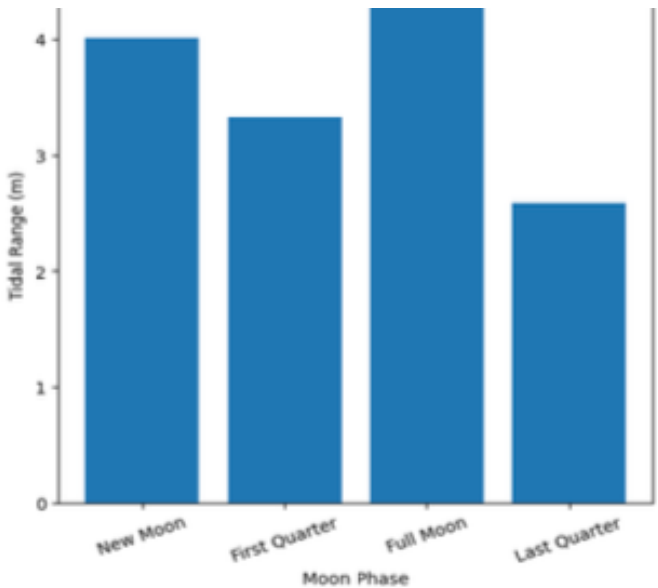
- **Three space science** graphing investigations that use real-world style data for students to graph and analyze
- **Multiple graphing tasks** (line graphs, bar graphs, and scatter plots) with data tables and analysis questions
- **Complete teacher supports** including answer keys, discussion questions, extension activities, and grading rubrics

What You Get



Tidal Range During Different Moon Phases
Point Atkinson, British Columbia tidal range during the Jan–Feb 2026 lunar cycle.

Moon Phase	Tidal Range (m)
New Moon	4.0
First Quarter	3.3
Full Moon	4.4
Last Quarter	2.6



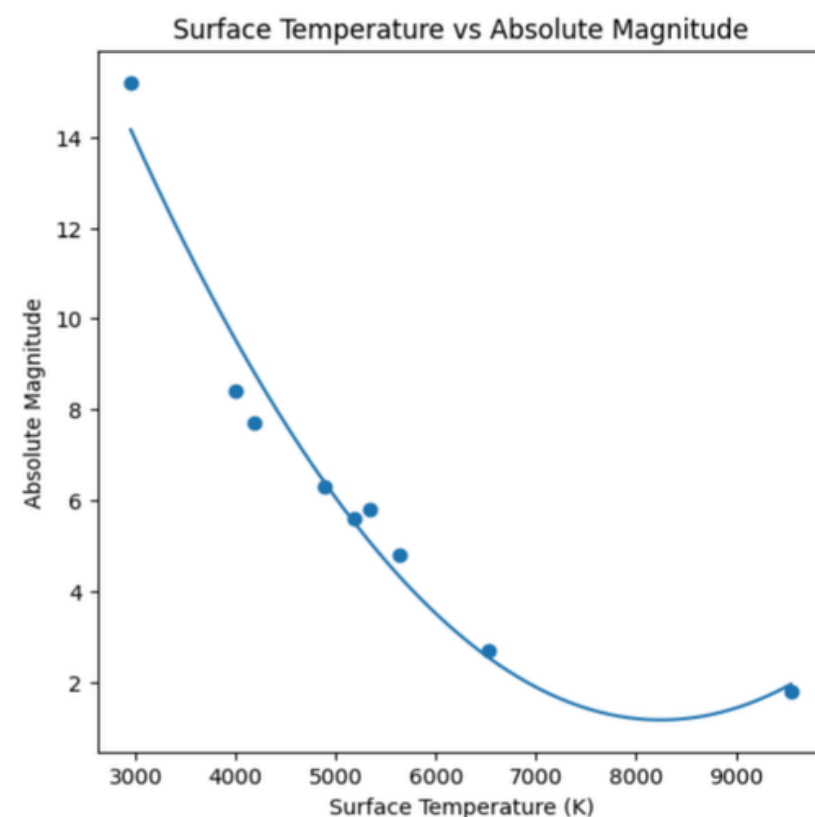
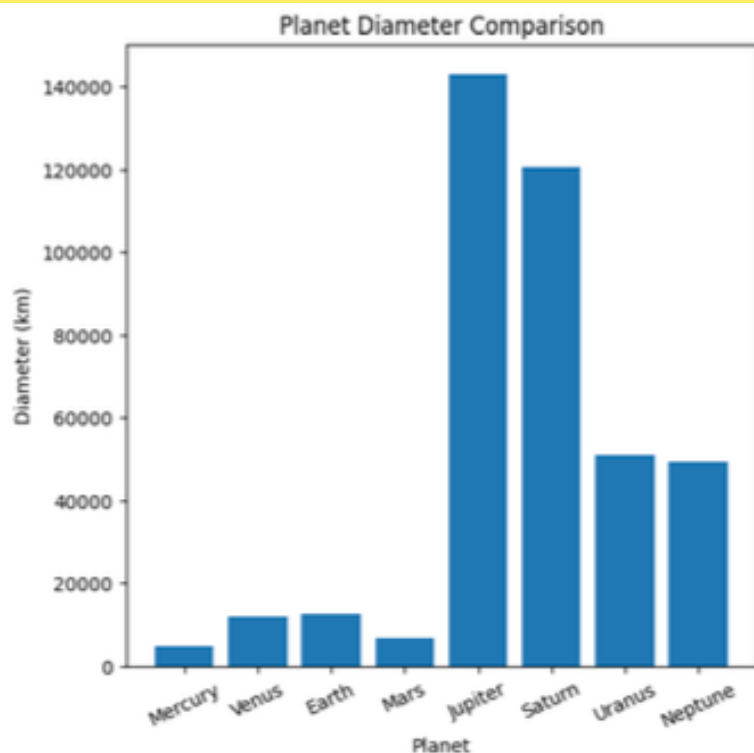
Moon Illumination vs Tidal Range

Moon Illumination (%)	Tidal Range (m)
0	4.0
50	3.3
100	4.4
50	2.6

Rubric				
Criteria	Level 1 (Limited)	Level 2 (Some)	Level 3 (Considerable)	Level 4 (Thorough)
Graph Construction	Graphs incomplete or unclear	Graphs contain scale errors	Graphs mostly accurate	Graphs accurate and well-constructed
Axis Labels & Units	Missing labels	Some labels	Most labels correct	All labels and units correct
Data Plotting Accuracy	Data incorrect	Some correct	Most correct	All accurate
Use of Provided Data	Uses little data	Uses some data	Uses most data	Uses all data appropriately
Pattern Identification	Few patterns identified	Basic patterns	Clear patterns	Detailed accurate patterns
Resource Trend Understanding	Limited understanding	Basic understanding	Clear understanding of trends	Strong understanding using data evidence
Connection to Depletion	Weak connection	Basic connection	Accurate connection	Clear explanation of how trends relate to depletion
Scientific Vocabulary	Rare use	Some correct use	Mostly correct use	Accurate throughout
Communication of Reasoning	Unclear	Somewhat clear	Mostly clear	Logical and well supported

What Will Your Students Learn?

- ✓ Helps students build graphing and data analysis skills using space science and astronomy data
- ✓ Supports NGSS Science & Engineering Practices through analyzing patterns and relationships in orbital speed, planet size, distance from the Sun, orbital period, moon illumination, tidal range, star temperature, and brightness
- ✓ Connects space science concepts like planetary motion, moon phases, tides, and stellar properties to real-world data analysis
- ✓ Encourages evidence-based reasoning by having students use graphs to explain how distance, position, temperature, and brightness affect objects in space



Orbital Speed by Planet: Mean orbit velocity from NASA Planet Compare.

Planet	Orbital Speed (km/h)
Mercury	170,503
Venus	126,074
Earth	107,218
Mars	86,677
Jupiter	47,002
Saturn	34,701
Uranus	24,477
Neptune	19,566

Planet Diameter Comparison: Planet diameter values from Jet Propulsion Laboratory JPL).

Planet	Diameter (km)
Mercury	4,879
Venus	12,104
Earth	12,756
Mars	6,792
Jupiter	142,984
Saturn	120,536
Uranus	51,118
Neptune	49,528

Distance from the Sun vs Orbital Period: Distance from the Sun from JPL.

Planet	Distance from Sun (AU)	Orbital Period (Earth Years)
Mercury	0.39	0.24
Venus	0.72	0.6
Earth	1.00	1.0
Mars	1.52	1.9
Jupiter	5.20	12
Saturn	9.54	29
Uranus	19.20	84
Neptune	30.06	165

Your Activities

- Include a background reading for student understanding
- DIGITAL and PRINT ready
- FULLY EDITABLE
- Extension activities for early finishers
- Complete Answer Key



STELLAR PROPERTIES, SURFACE TEMPERATURE & ABSOLUTE MAGNITUDE

The collage displays various educational resources for a unit on stellar properties. It includes:

- Worksheets:** Several pages with text, tables, and questions. One worksheet is titled "Stars, Temperature & Brightness Data Investigation" and includes a table of stellar data. Another worksheet is titled "Surface Temperature & Absolute Magnitude" and includes a table of stellar data. A third worksheet is titled "Stellar Properties, Surface Temperature & Absolute Magnitude" and includes a table of stellar data.
- Data Tables:** Two tables are visible. The first table is titled "Surface Temperature & Absolute Magnitude" and lists data for various stars. The second table is titled "Stellar Properties, Surface Temperature & Absolute Magnitude" and lists data for various stars.
- Graphs:** Several graphs are shown, including a line graph of surface temperature vs. absolute magnitude, a bar graph of surface temperature vs. absolute magnitude, and a scatter plot of surface temperature vs. absolute magnitude.
- Other Materials:** A ruler, a pencil, and a small notebook are also visible.

Students Create Different Types of Graphs Based on Real World Data

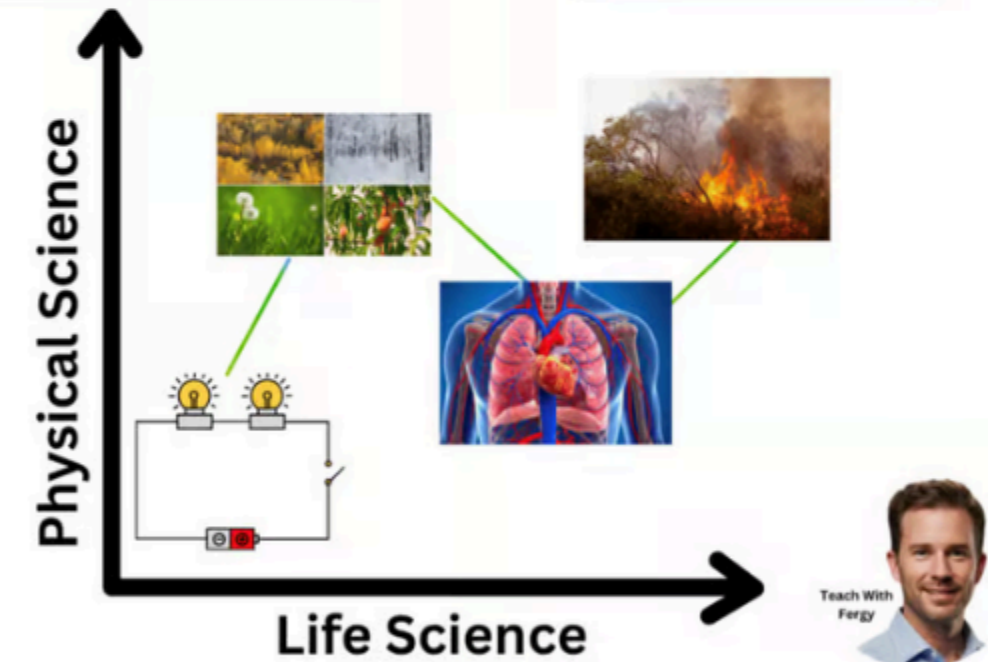
High School Science Graphing & Data Analysis Bundle

Get all my Graphing and Data Analysis Activities at a **HUGE** discount. Additionally, you'll get access to all additional activities I create in the future.

HIGH SCHOOL Science
Graphing & Data Analysis
Mega Bundle

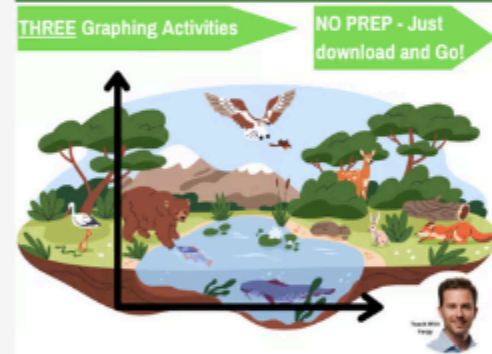
Graphing Activities Across
ALL TOPICS

**NO PREP - Just
download and Go!**



**Plus Many More!
Click Here**

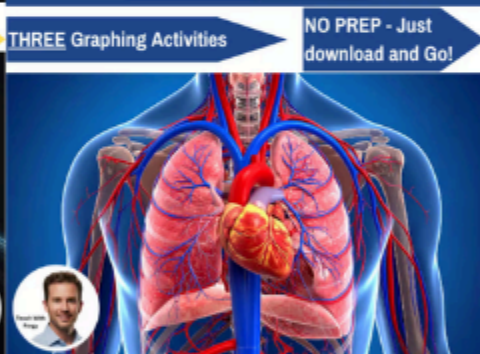
Ecology & Population Dynamics
Data Analysis Graphing Bundle
HIGH SCHOOL



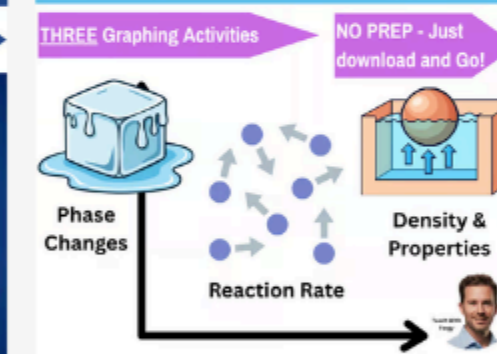
Space Science Data Analysis
Graphing Bundle
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Human Body Systems &
Physiology Graphing Bundle
HIGH SCHOOL



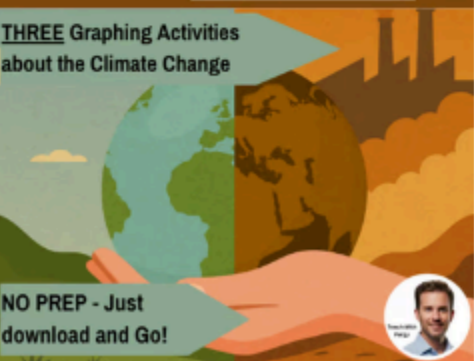
Matter & Chemical Change
Data Graphing Bundle
HIGH SCHOOL



Infectious Disease Data Analysis
& Public Health Graphing Bundle
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Climate Change Data Analysis
& Long-Term Trends Graphing
Bundle - **HIGH SCHOOL**



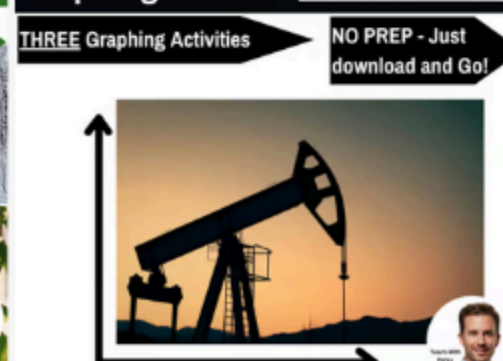
Force, Motion & Newton's
Laws - **HIGH SCHOOL**



Seasons and Earth's Systems
Graphing Bundle
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Energy, Resources and
Sustainability Data Analysis
Graphing Bundle - **HIGH SCHOOL**



Thanks
**for your interest
in this resource!**

I am a real person and if
you have any questions,
suggestions, or concerns,
please reach out.



devon@teachwithfergy.com

TWF

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*Let's
Connect!*

