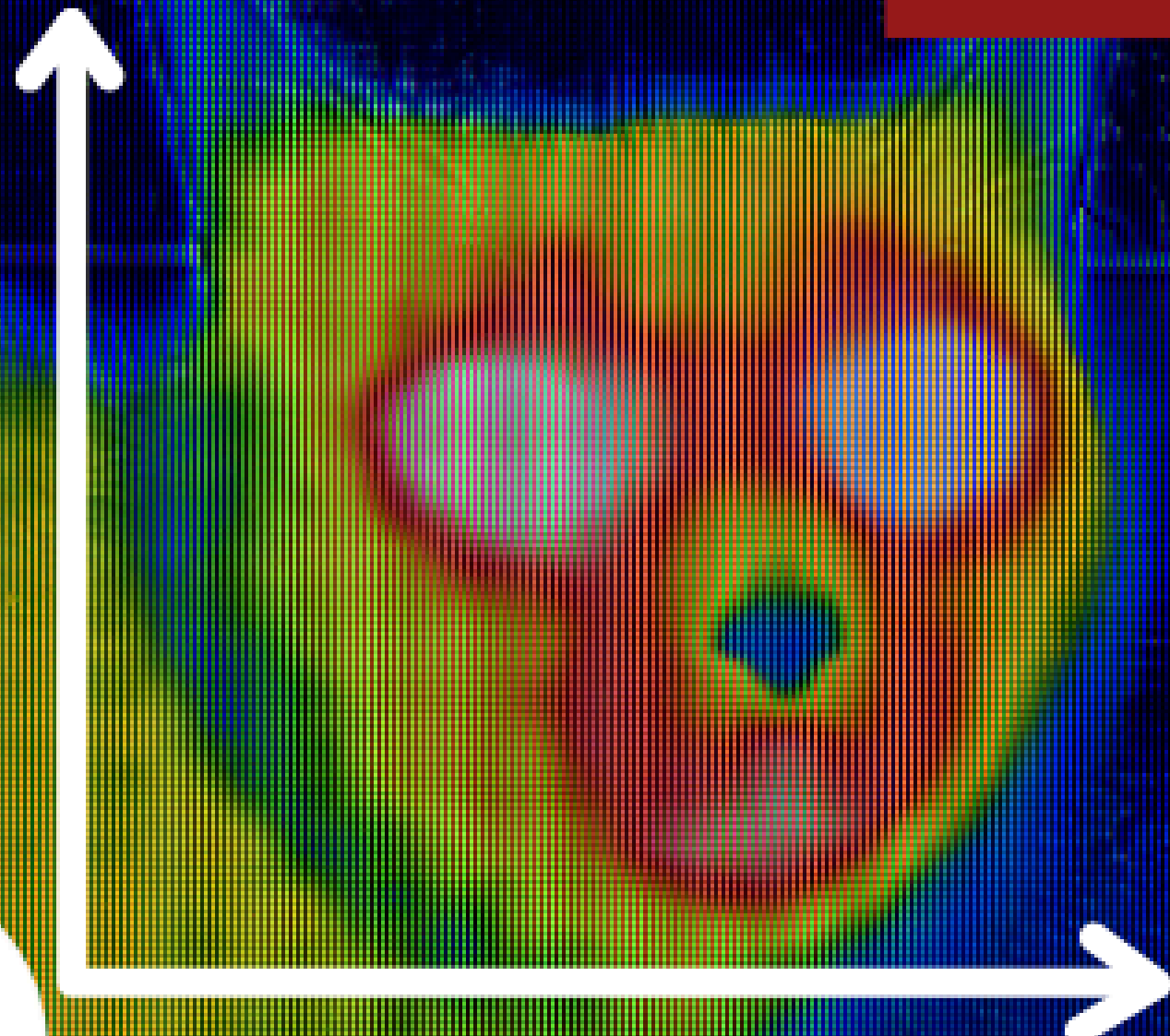


Thermal Energy & Heat Transfer Data Analysis Graphing Bundle - HIGH SCHOOL

THREE Graphing Activities

NO PREP - Just
download and Go!



14.8

**Students use Real
World Data to create
different graphs and
answer Energy
Transfer and Heat
questions.**

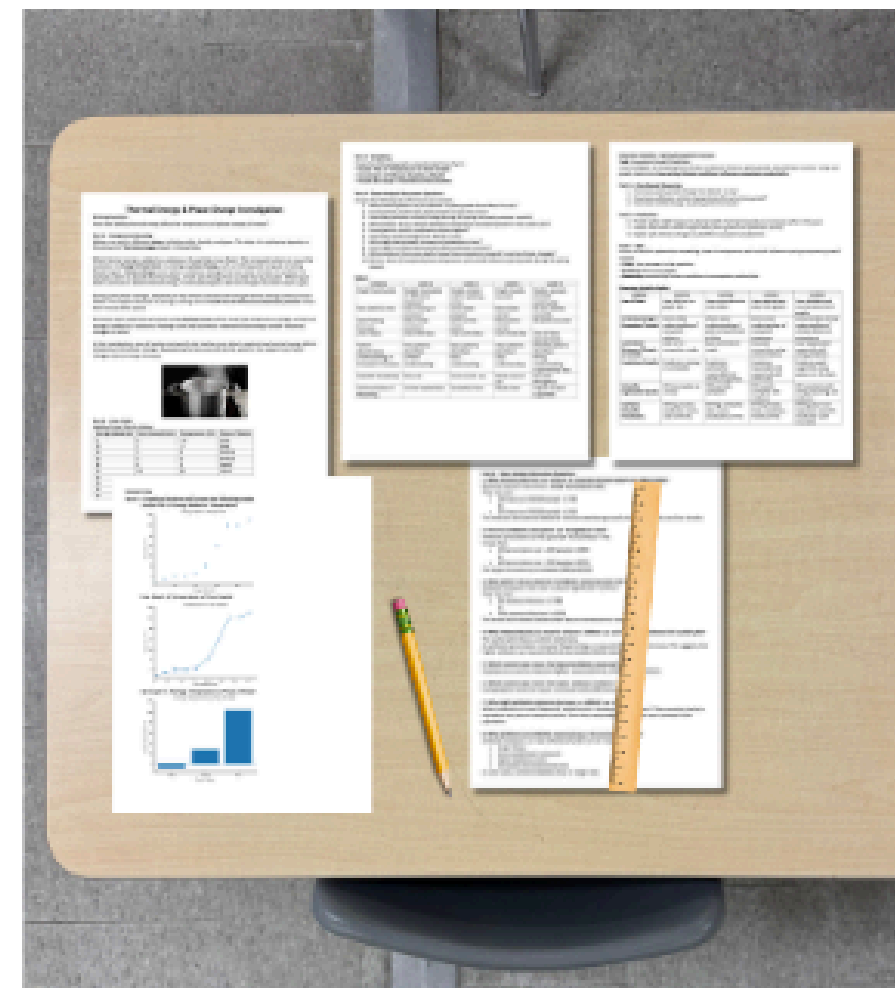
**SCROLL
to take a look inside!**



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

THERMAL ENERGY, HEATING CURVES & PHASE CHANGE

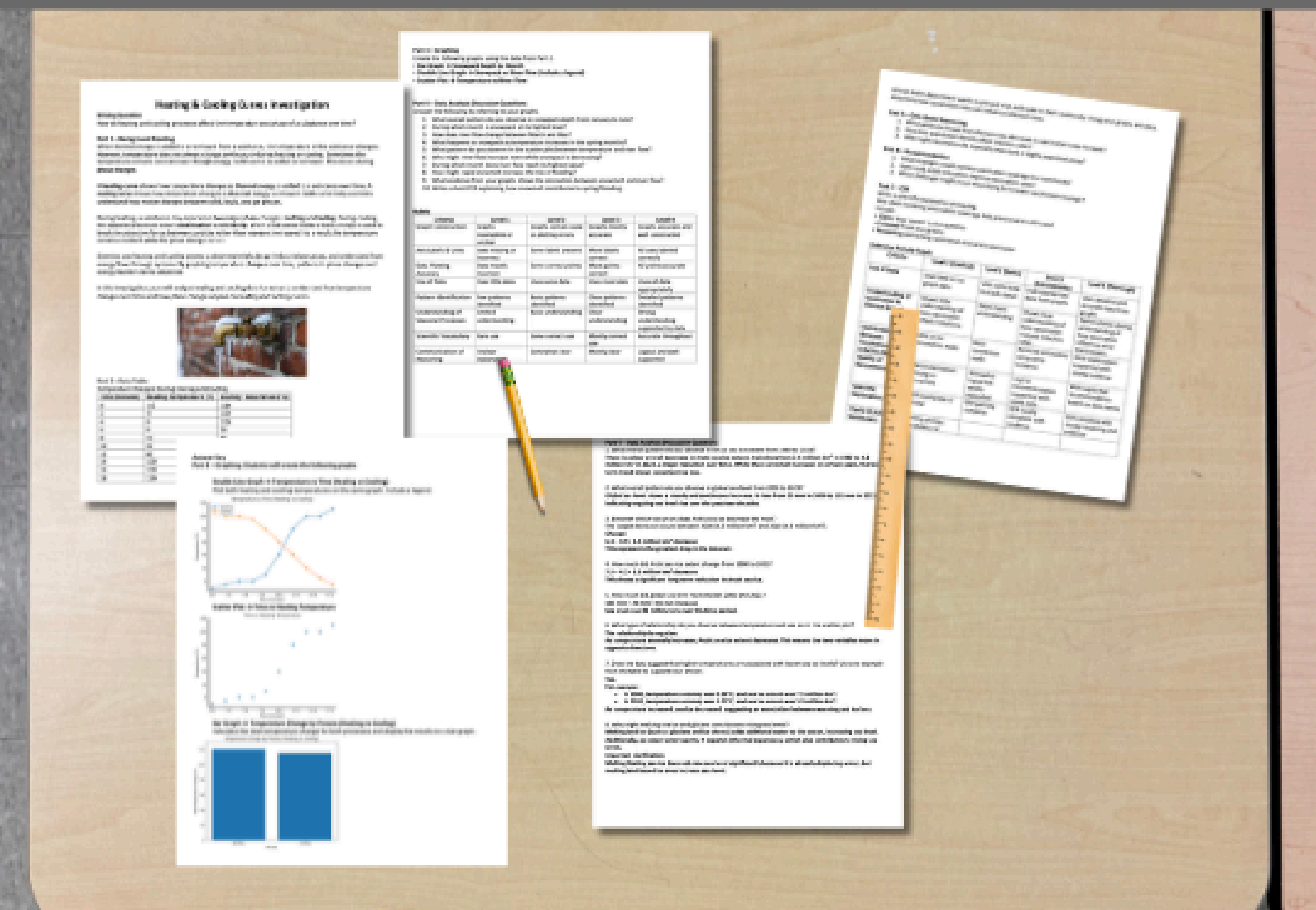


- Background Reading
- Data Tables
- Students Create Different Graph Types
- Extension Activity
- Full Marking Rubric

NO PREP or Materials

What Will Your Students Learn?

HEATING & COOLING CURVES, PHASE CHANGE & THERMAL ENERGY

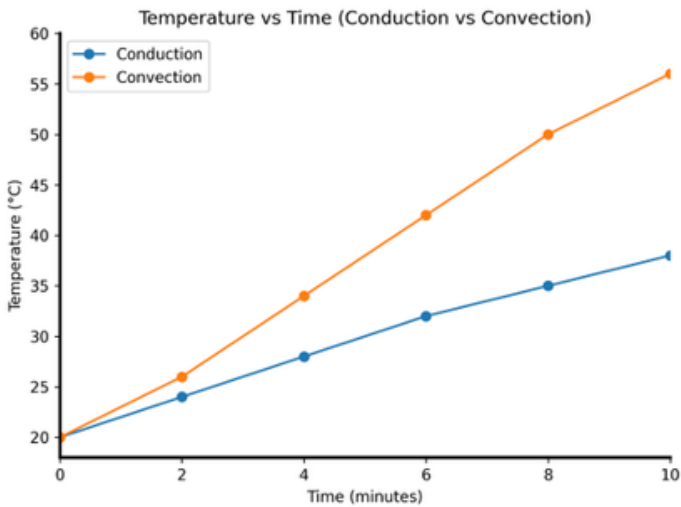
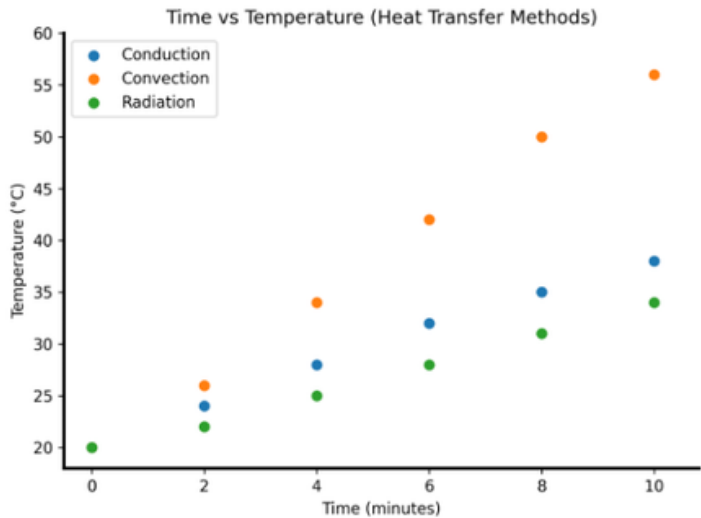
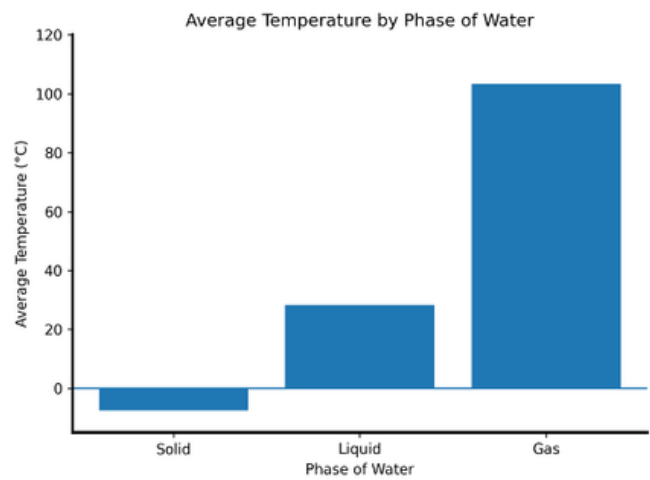


Students Use Their Graphs to Answer Questions and Draw a Conclusion

- ✓ Thermal energy and heat transfer
- ✓ Temperature changes during heating
- ✓ Temperature changes during cooling
- ✓ Heating curves and cooling curves
- ✓ Phase changes (melting and boiling)
- ✓ Energy transfer through matter
- ✓ Particle motion and thermal energy
- ✓ Relationships between temperature and time
- ✓ Patterns in energy transfer data
- ✓ Graph interpretation and data analysis
- ✓ Scientific explanation using evidence

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

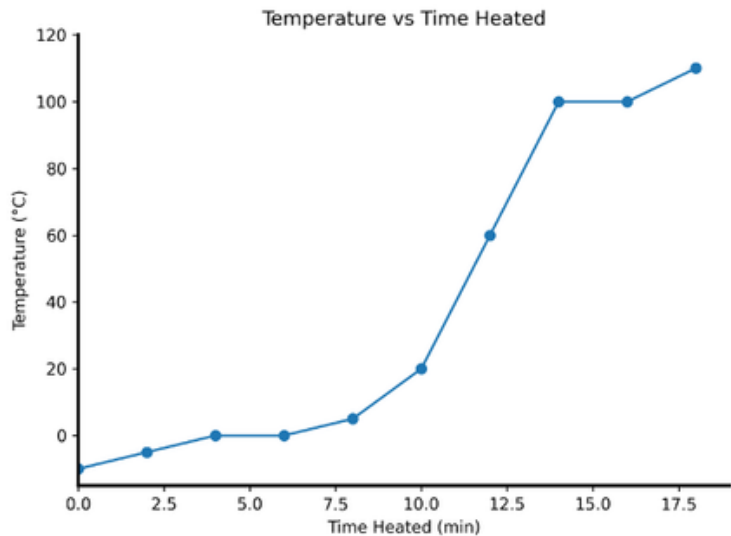
What You Get



Part 2 – Data Table

Heating Curve Data for Water

Energy Added (kJ)	Time Heated (min)	Temperature (°C)	Phase of Water
0	0	-10	Solid
10	2	-5	Solid
20	4	0	Melting
30	6	0	Melting
40	8	5	Liquid
50	10	20	Liquid
60	12	60	Liquid
70	14	100	Gas
80	16	100	Gas
90	18	110	Gas



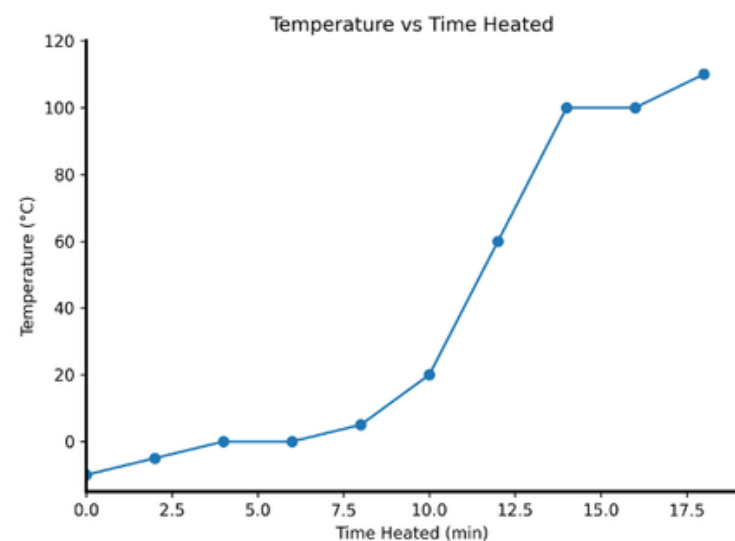
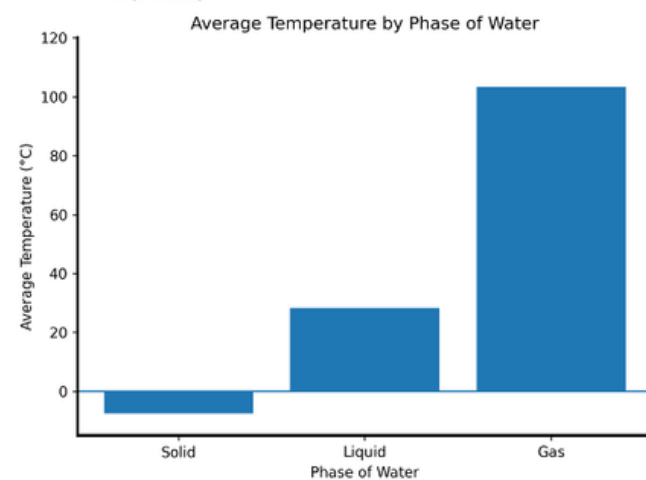
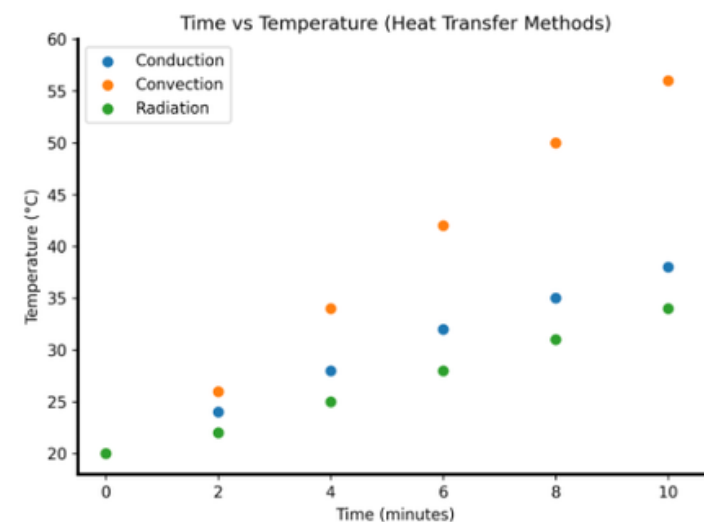
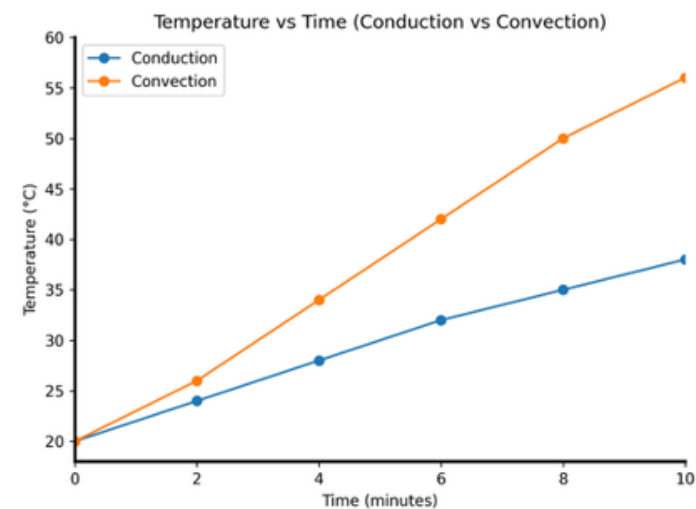
Rubric				
Criteria	Level 1 (Limited)	Level 2 (Some)	Level 3 (Considerable)	Level 4 (Thorough)
Graph Construction	Graphs incomplete or unclear	Graphs contain scale errors	Graphs mostly accurate	Graphs accurate and well-constructed
Axis Labels & Units	Missing labels	Some labels	Most labels correct	All 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

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.



What Will Your Students Learn?



Part 2 – Data Table
Heating Curve Data for Water

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70	14	100	Gas
80	16	100	Gas
90	18	110	Gas

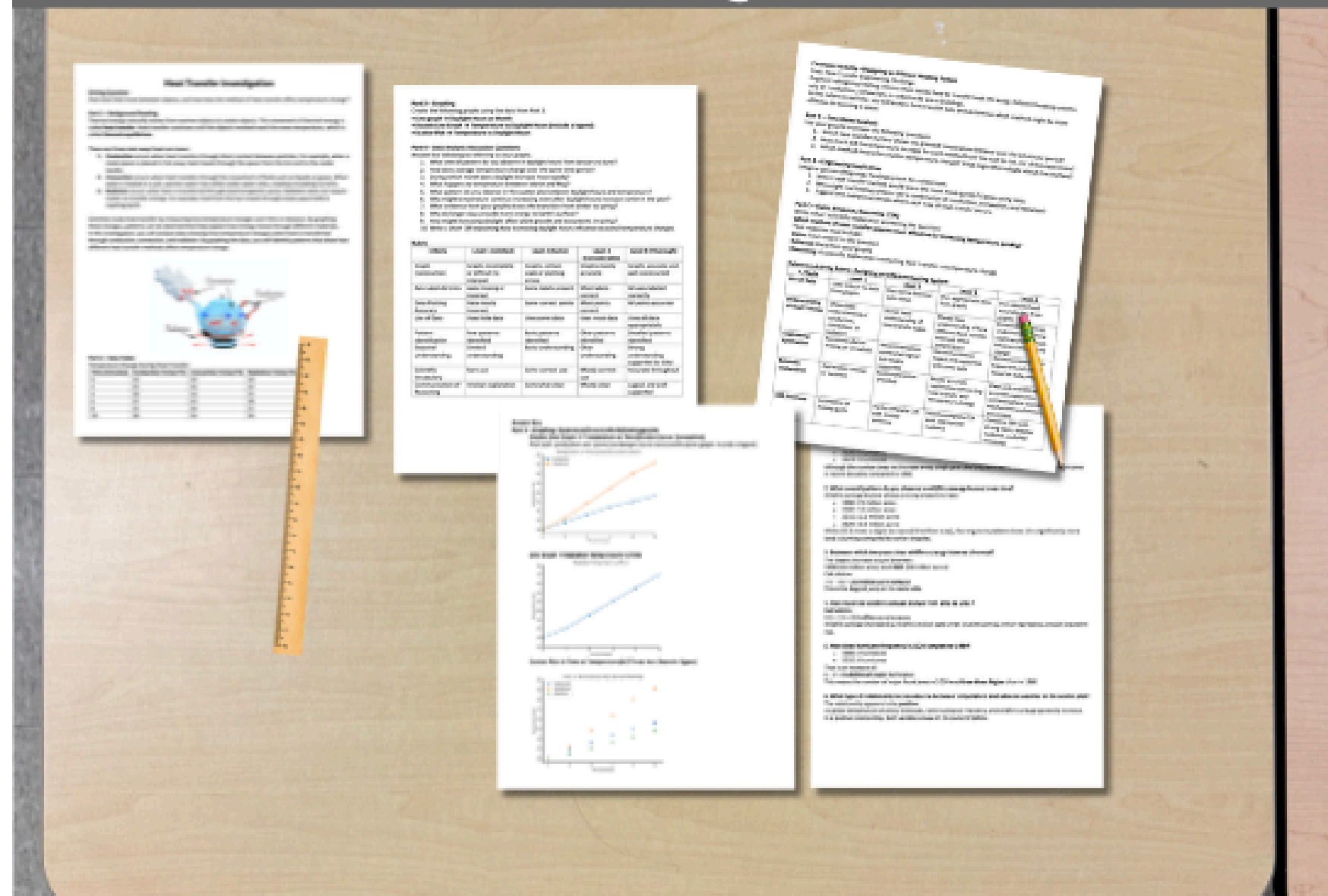
- ✓ Helps students build **graphing and data analysis skills** using real-world style thermal energy and temperature datasets
- ✓ Supports **NGSS Science & Engineering Practices** through analyzing patterns and relationships in heating curves, cooling curves, temperature change over time, and energy transfer
- ✓ Connects **physical science concepts** (such as thermal energy, heat transfer, particle motion, and phase changes) to real-world style temperature data and scientific investigations
- ✓ Encourages **evidence-based reasoning** by having students use graphs to explain how thermal energy moves through matter and how heating and cooling processes affect temperature changes

Your Activities

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



HEAT TRANSFER MECHANISMS & THERMAL EQUILIBRIUM



Students Create Different Types of Graphs Based on Real World Energy Data

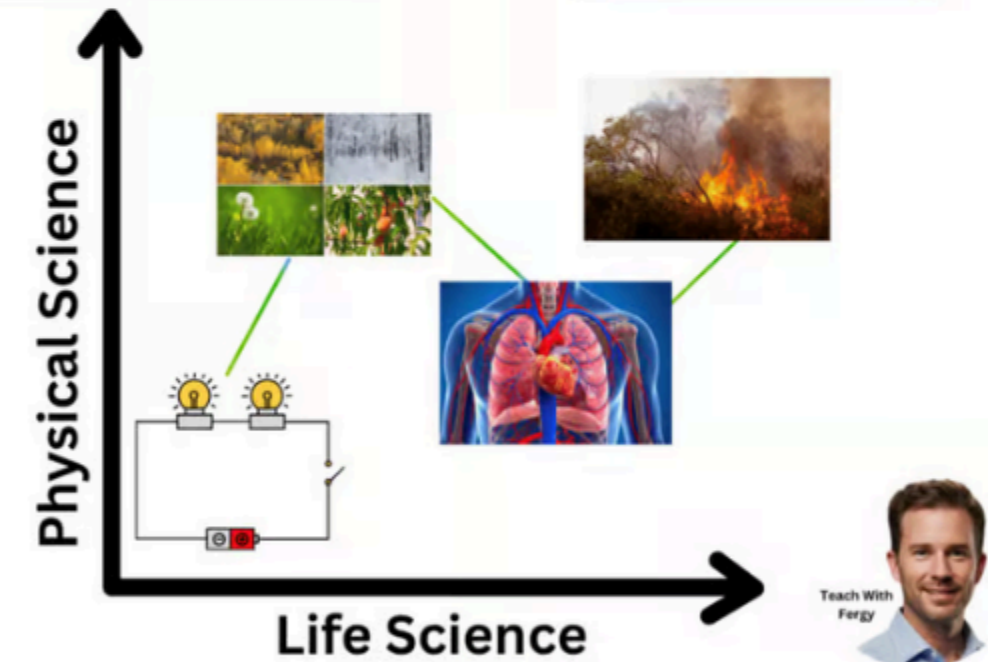
High School Science Graphing & Data Analysis Bundle

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

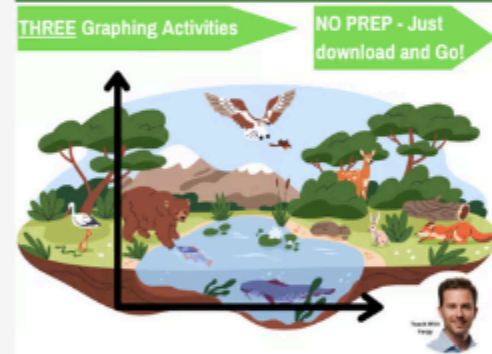
Graphing Activities Across
ALL TOPICS

NO PREP - Just
download and Go!



Plus Many More!
Click Here

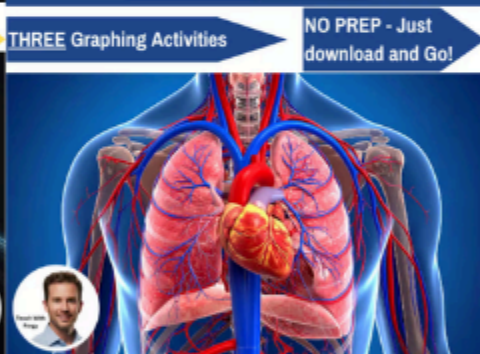
Ecology & Population Dynamics
Data Analysis Graphing Bundle
HIGH SCHOOL



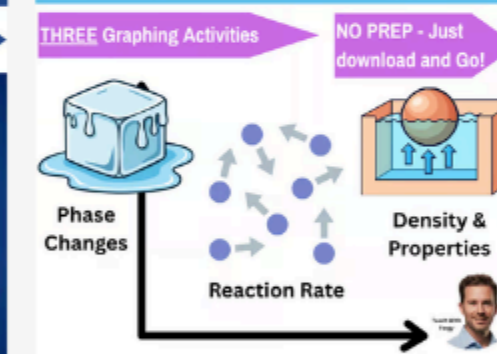
Space Science Data Analysis
Graphing Bundle
HIGH SCHOOL



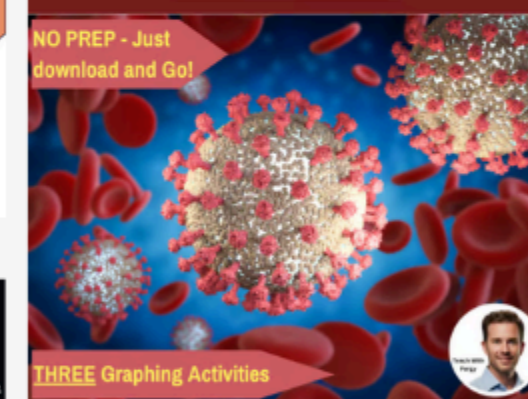
Human Body Systems &
Physiology Graphing Bundle
HIGH SCHOOL



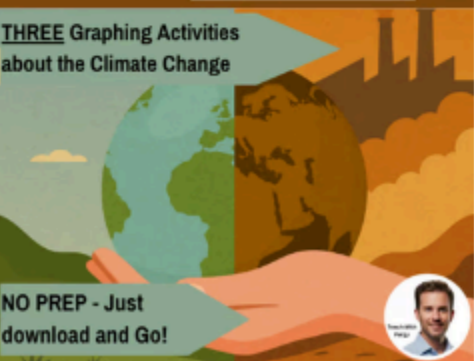
Matter & Chemical Change
Data Graphing Bundle
HIGH SCHOOL



Infectious Disease Data Analysis
& Public Health Graphing Bundle
HIGH SCHOOL



Climate Change Data Analysis
& Long-Term Trends Graphing
Bundle - HIGH SCHOOL



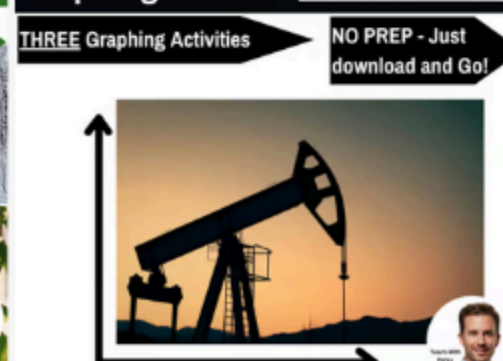
Force, Motion & Newton's
Laws - HIGH SCHOOL



Seasons and Earth's Systems
Graphing Bundle
HIGH SCHOOL



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

Teach With Fergy

*Let's
Connect!*

