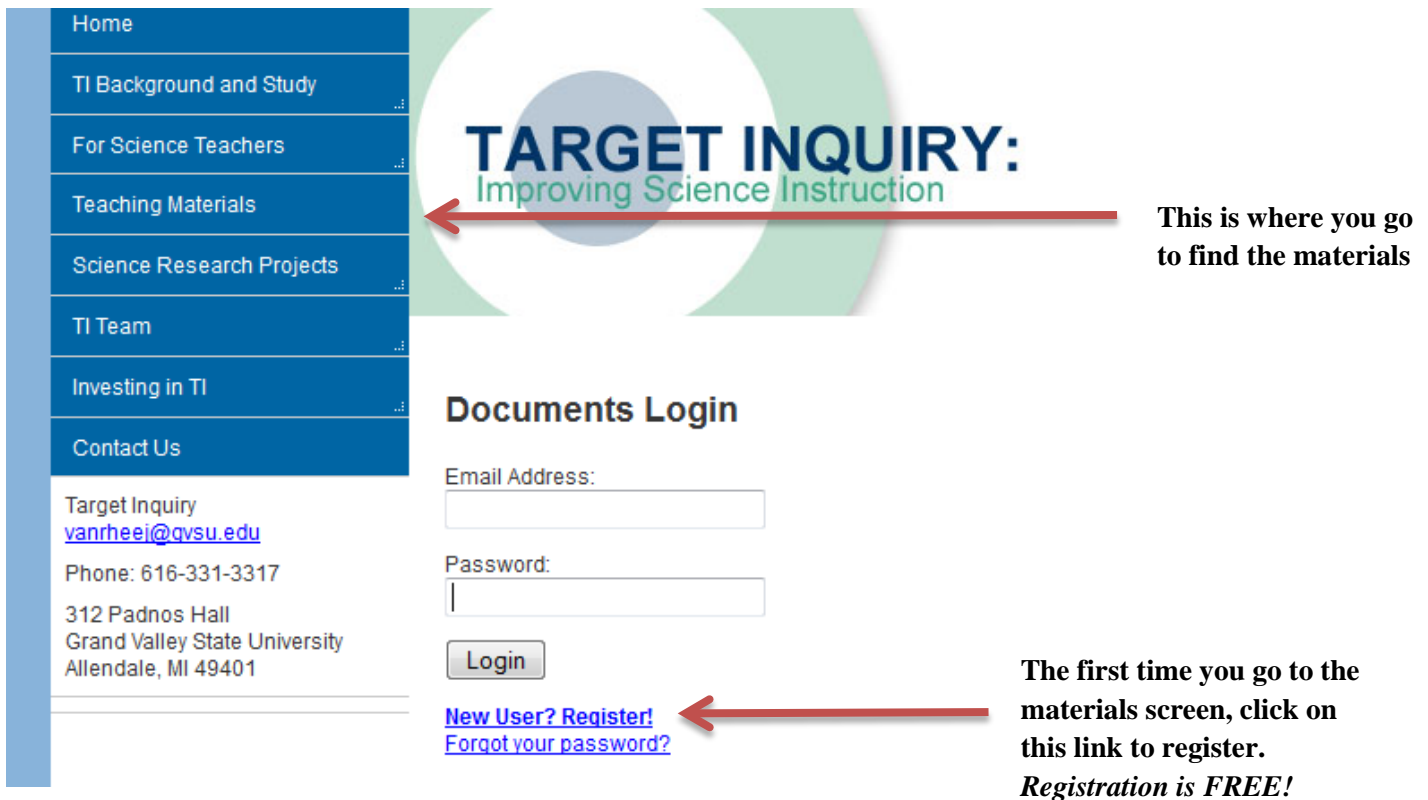


Target Inquiry Materials

www.gvsu.edu/targetinquiry



The screenshot shows the Target Inquiry website interface. On the left is a blue navigation menu with the following items: Home, TI Background and Study, For Science Teachers, Teaching Materials, Science Research Projects, TI Team, Investing in TI, and Contact Us. Below the menu is contact information for Target Inquiry, including the email vanrheej@gvsu.edu, phone number 616-331-3317, and address: 312 Padnos Hall, Grand Valley State University, Allendale, MI 49401. The main content area features a large graphic with the text "TARGET INQUIRY: Improving Science Instruction". Below this is a "Documents Login" section with input fields for "Email Address:" and "Password:", and a "Login" button. At the bottom of the login section are two links: [New User? Register!](#) and [Forgot your password?](#). A red arrow points from the "Teaching Materials" menu item to the "Documents Login" section. Another red arrow points from the "New User? Register!" link to the right.

This is where you go to find the materials

The first time you go to the materials screen, click on this link to register. Registration is FREE!

What is included with each activity?

- Each activity has both a student guide and a teacher guide
- The student guide contains:
 - List of learning objectives
 - Question(s) or problem(s) for students to answer/solve during the activity
 - Pre-lab material where appropriate
 - Relevant background required
 - Safety considerations where appropriate
 - Instructions for the students to complete the activity
 - Analysis and discussion questions
 - Going-Further questions where appropriate
- The teacher guide contains:
 - Relevant Michigan and NSES science content and process standards
 - Materials, preparation, and disposal instructions
 - Documented misconceptions associated with the concepts addressed in the activity
 - Relevant science background for the teacher
 - Facilitation notes (pacing, questioning strategies, possible hints, etc.)
 - Sample student data/answer key
 - Additional assessment questions (in some cases)
 - References

Target Inquiry Materials

Activity Title	Concepts Addressed
World in a Box	Particulate modeling of s, l, g, element, compound, mixture
What's in the Bubbles	Evaluating/designing gas collection methods, chem/phys change
Trend Setter	Periodic trends
What's in a Scientists Toolbox	Principles of measurement
Part 1_Change You Can Believe In Part 2_The Only Constant is Change	Symbolic, particulate, and macro treatment of chem/phys change
Density Part 1_The Murky Mystery of Matter Measurement Density Part 2_ Its Sweet to be Dense	Intensive v. extensive properties; density / mass, volume conservation in chem change; concentration v. density of solutions
Density Stuff in Space	Density
I'm Too Sexy	Bonding; Lewis dot structures
What Happens to Atoms as They Interact - An Introduction	Ionic, polar covalent, non-polar covalent bonding; electronegativity
Density (Get in the Game)	Mass, volume, and density
Bond Mission (Ionic bonding)	Ion size, ionic formulae, particulate models
May the Force be with You	Intermolecular forces
To Share or Not to Share	Geometries of molecules
I Want to Bond with You	Ionic bonding
How Old is My Dinosaur Bone	Nuclear decay; half-life
Heat of fusion Melt Ice Cube	Heat of fusion of water; thermochemistry
Either Ore	% composition; single-replacement rxns (w/ or w/out redox)
How Many Reactants Does it Take to Make a Product	Balancing Equations
Jewelry Exchange - It's a Bling Thing	Activity series; single-replacement reactions
When Am I Ever Going To Use This Stuff	Application of single replacement reaction; stoichiometry
The Force	IMF's, structure, and properties of materials
Sticky Water (magnet and Velcro model versions)	Intermolecular forces, dissolving polar and non-polar, particulate models
Dissolving Ionic Compounds (Sticky ions)	Dissolving of ionic compounds, conductivity, particulate models
Properties of water (A Fishy Problem)	Intermolecular forces, dissolving ionic and non-polar, density, particulate models
Where's My Salt (dissolving ionic compounds)	Ionic bonding, solutions, particulate animations
Mole Money	Introduction to stoichiometry
What The Fizz	Stoichiometry - discovering ratios in equations
Empirical Formula	Empirical formula
What A Gas	Kinetic molecular theory; gas volume, temperature, pressure
A Latin Pile	Moles; molar mass; particles
Iron Transitions	Redox 1/2 reactions; assigning oxidation numbers
I Can't Take All This Pressure	Gas laws; graphs & equations; kinetic molecular theory
Cookie conversions	Conversion factors
Very Cool Activity (Thermochemistry)	Enthalpy of dissolving, Thermochemistry
What Type of Fish (Gas Solubility - Thermal Pollution)	Gas, solubility, kinetic molecular theory, temperature
One of These is not like the Other	Isomers and alkane nomenclature
Red Alert	Reaction rates
Can't You Smell That Smell	Esterification & functional groups (acids/alcohols)
Energizer Lab	Model of voltaic cell - introduction to electrochemistry
My Acid Can Beat Up Your Acid	Acid strength; dilute v. concentrated acids
Redox I've Got the Power	Redox
This Lab is Chaos	Enthalpy and entropy; basic thermo
Rainbow Connection	pH and hydronium ion concentration; acid-base indicators
All Things Being Equal	Equilibrium, LeChatelier's Principle
It's Electric (Electrolytic cells)	Electrolytic cell, redox, pH
<i>Radioactive Decay Exploration!</i>	<i>Effects of distance and shielding; half-life; alpha, beta, and gamma radiation</i>
<i>Is My Kitchen Radioactive</i>	<i>Band of stability, alpha and beta decay</i>
<i>Avogadro's Airbag</i>	<i>Application of gas laws and stoichiometry</i>

Italics = Activities that will hopefully be posted on the website shortly