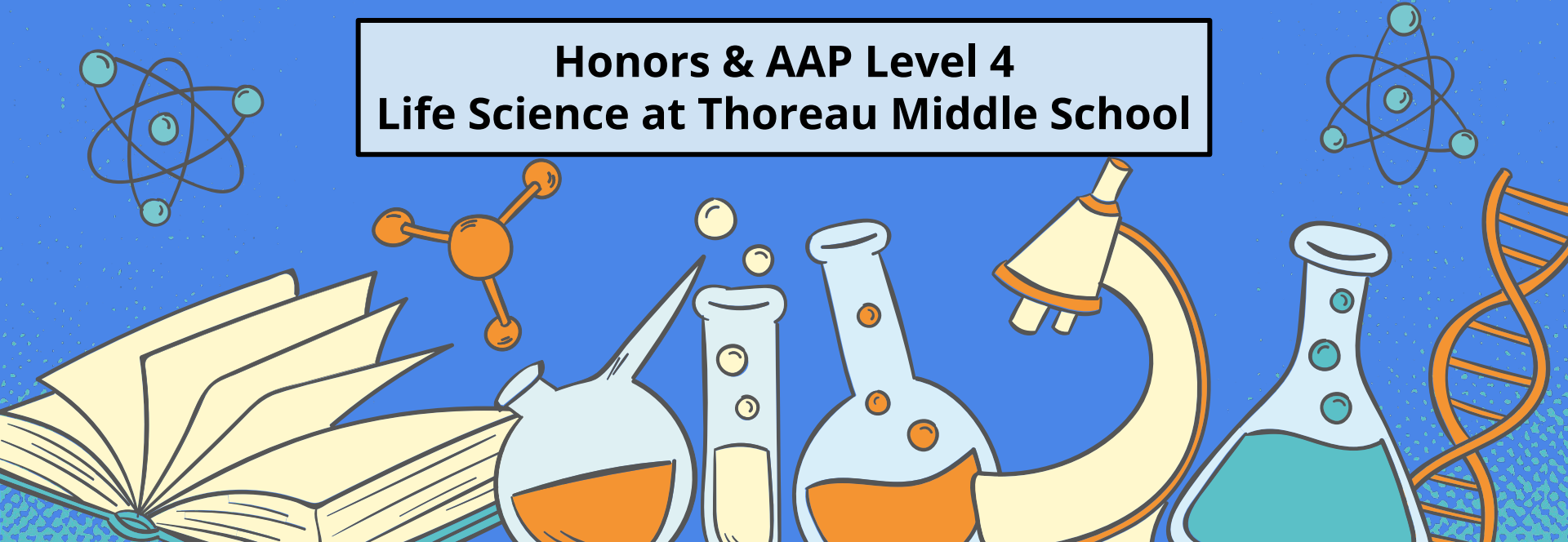


# Science 7

## Life Science

**Honors & AAP Level 4  
Life Science at Thoreau Middle School**



# Meet the Science 7 Team!



Ms. Chaffee-Gould



Ms. Galus



Ms. Everett



Ms. Norton



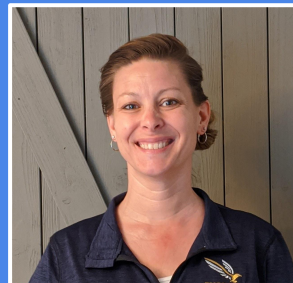
Ms. Loehle



Mr. Paz



Mr. Robinson



Ms. Oehm

**Our Mission:**  
To create interactive and engaging lessons that spark curiosity in students that is relevant to their world. To build a fun and interesting class that the students want to tell someone else about. Lastly, we will provide the opportunity to build deep and enduring knowledge about the world around them.

# Units of Study

Life Science

## Interactions in Ecosystems



Quarter 1

Quarter 2

Life Science

## Cause and Effect Relationships in Ecosystems



Life Science

## Matter and Energy in Living Systems



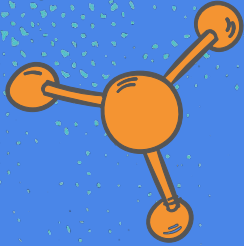
Quarter 3

Quarter 4

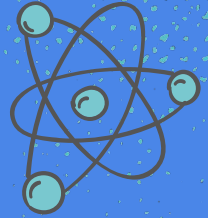
Life Science

## Stability and Change in the Hereditary System





# Quarter Projects



01

MWEE Action  
Project

Students will propose a plan to help reduce the school's impact on our local watershed based on the data collected during the Meaningful Watershed Educational Experience (MWEE).

02

Human  
Impact

Students will create a PSA to display how humans impact ecosystems and come up with a solution to solve the problem.

03

Cell RAFT

Students will take a creative perspective to teach others about cells in a unique way by using the RAFT structure.

04

POG POL

Students will reflect on one of the POG skills and demonstrate their growth throughout the year.



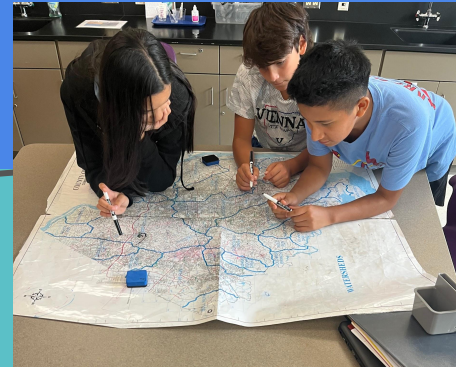
# Portrait of a Graduate

Our focus in Science has been on one specific Portrait of Graduate skills.

## Ethical & Global Citizen

Students will learn to:

- Participate in activities that benefit their community.
- Consider the impact on the environment when they make daily choices.



# MWEE Field Trip

**Our field trip will provide students a real-world, hands-on opportunity to investigate watershed ecology and the impact humans have on ecosystems.**

**Students work with staff and students from George Mason University to collect field data and evaluate the “health” of the ecosystem.**

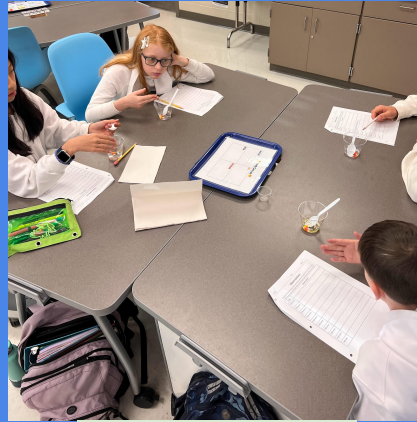
**Students conduct water quality testing at the creek by measuring pH, dissolved oxygen, conductivity, temperature and nitrates.**





# Classroom Explorations

**Water Testing!**

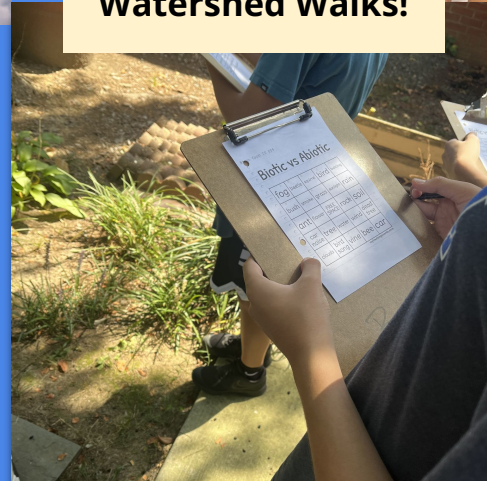


**Candy Corn Lab!**

**Microscope Explorations!**



**Watershed Walks!**



# Classroom Explorations

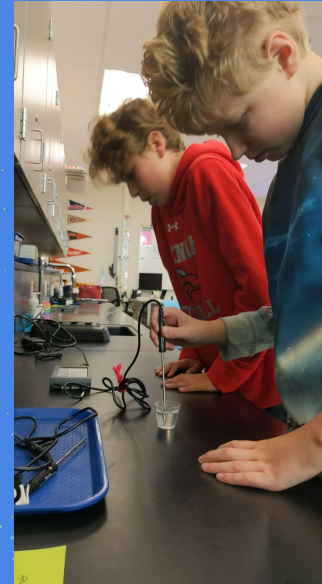
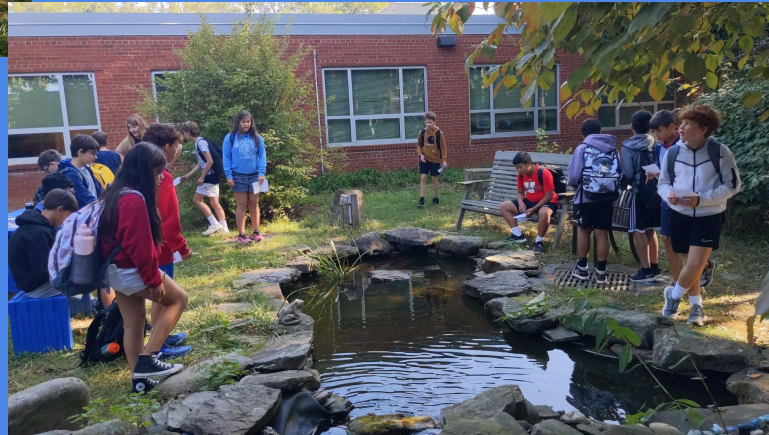
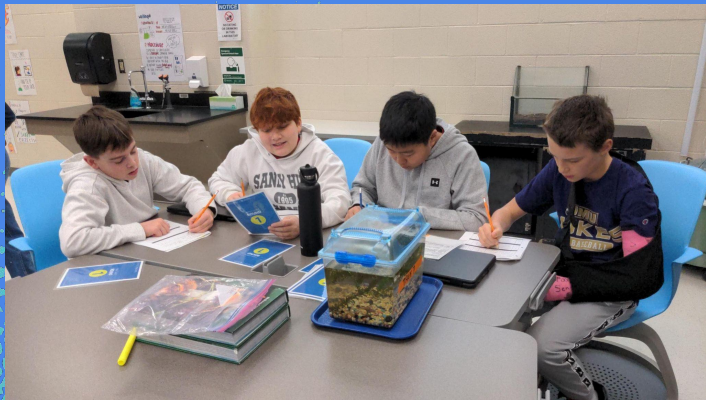


**Outdoor Learning!**



**More Water Testing!**

**Developmental Dilemma Lab!**





# Science 7 website

TMS Life  
Science

Home

Meet the Team

7th Grade

Field Trip Information

Parental Resources

Social Emotional  
Learning

Portrait of a Graduate

## Thoreau Middle School 7th Grade Life Science

Thoreau Science Teachers believe science class should be:

Interactive and engaging, sparking curiosity in students that is relevant to their world.

Fun, interesting, and the class students want to tell someone else about.

Opportunity to build deep and enduring knowledge about the world around them.



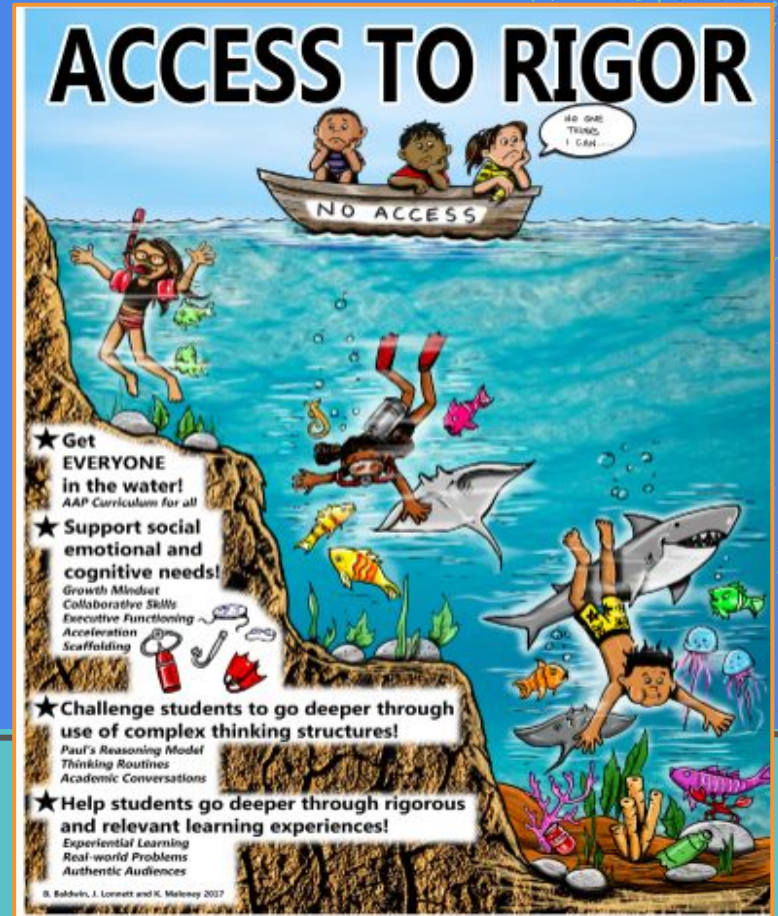
Scan the QR code to access the Science 7  
website for more information!



# Honors: Why & What this Means for your Student

- Why:

- Giving all of our students the opportunity to stretch their thinking.
- Developing talent in our students to help them access higher level courses in high school and beyond
- No SOL (Standard of Learning) test, but rather an LAA (Local Alternative Assessment), and therefore:
  - lower stakes
  - more opportunities to engage in authentic, performance based assessments



# Honors: Why & What this Means for your Student

## • What this means for instruction:

- Including at least one extension/honors standard per unit
- Implementing Advanced Academics strategies:
  - Thinking routines
  - Critical & Creative Thinking (CCT) strategies
  - Academic Conversations
- Offering students authentic, real-world learning experiences and assessments



## Differentiating UP:

### Meeting the Needs of Advanced Learners & Developing Talents In All Students

- To meet the unique needs of advanced learners and develop talents in all students, teachers differentiate learning tasks and environments, instructional approaches, and assessments to increase learning outcomes for all students.
- In planning for differentiating up, teams can plan for adjusting **DEPTH, COMPLEXITY, CREATIVITY, & ACCELERATION** strategies.

Do This!	WHY and HOW
 <b>INCREASE RIGOR</b>	<p>A rigorous education includes learning experiences that are intellectually complex and personally meaningful.</p> <ul style="list-style-type: none"><li>• Focus on the depth and complexity of learning opportunities, with an emphasis on "different, not more."</li><li>• Increase the frequency and intensity of higher order thinking through authentic tasks and problems that require students to synthesize, analyze, evaluate, and create.</li><li>• Create learning experiences that allow students to use their strengths and personal interests.</li></ul> <p>Rigorous instruction focuses on student growth rather than on meeting minimal proficiency standards.</p> <ul style="list-style-type: none"><li>• Pre-assess before instruction begins to find out what students already know so all students advance from their starting point, even if that means moving beyond what is typical for that age/grade.</li><li>• Monitor learning and adjust instruction along the way to be sure the task is not too easy or so challenging as to be frustrating (peak of proximal development).</li><li>• Create the "just right" level of rigor by adjusting aspects of the task to match the learner's needs (e.g., level of abstraction, pace of learning, scaffolds provided, degree of open-endedness).</li></ul>
 <b>DEVELOP EXPERTISE</b>	<p>Developing disciplinary expertise leads to deeper understanding of content, skills, and habits of mind, and helps students connect the content to their own lives.</p> <ul style="list-style-type: none"><li>• Support growth and developmental mindsets through use of a "novice to expert" continuum using real world problems that ask students to learn, apply, practice, reflect, and refine.</li><li>• Challenge students to make connections across disciplines. Support application of interdisciplinary connections through macro and micro concept development.</li><li>• Make time for students to take deep dives into their personal passion areas, and provide opportunities for purposeful interaction among students who have similar interests.</li></ul> <p>Exploring authentic issues and developing discipline-specific skills allow students to reflect on personal strengths and interests and to consider future career pathways.</p> <ul style="list-style-type: none"><li>• Support students' awareness of their potentiality; encourage exploration of a wide variety of disciplinary fields without the pressure to specialize too early.</li><li>• Connect students to experts, professionals, and mentors related to disciplinary interests.</li><li>• Embed self-reflection and cross-emotional learning within the curriculum.</li></ul>
 <b>MODIFY STRUCTURE OR PACE</b>	<p>Advanced learners often require less direct instruction, comprehend complex ideas more quickly, and require less review.</p> <ul style="list-style-type: none"><li>• Direct instruction should be used sparingly; instead, provide time and autonomy for students to construct their own knowledge as they engage in open-ended tasks that require critical and creative thinking.</li><li>• Use strategies (e.g., contract learning, learning contracts) that provide flexibility of pace of learning so students may move more quickly or slow down for a deeper dive when appropriate.</li></ul> <p>A flexible learning environment allows for personalized instruction.</p> <ul style="list-style-type: none"><li>• Students can explore "tricky" problems in a way that is co-constructed between student and teacher.</li><li>• Offer scaffolds only as needed, and remove scaffolds that may hinder students from engaging in productive struggle and making intuitive leaps and connections.</li><li>• Use cluster and flexible grouping practices based on students' interest, readiness, and learning profiles.</li></ul>
 <b>ENCOURAGE INDEPENDENCE &amp; AUTONOMY</b>	<p>Independent, autonomous students take intellectual risks and become self-directed, empowered learners.</p> <ul style="list-style-type: none"><li>• Strategically transition from teacher-centered instruction to student-directed learning.</li><li>• Co-develop with students learning experiences that include independent exploration and problem-based learning.</li><li>• Have frequent check-ins using coaching strategies to guide and support students through learning experiences.</li></ul> <p>Students need opportunities to reflect on strengths, set goals, and measure success.</p> <ul style="list-style-type: none"><li>• Model and provide structures for reflective practices to encourage metacognition and a focus on skills being built through classroom and personal experiences.</li><li>• Utilize student portfolios that promote student-led selection of meaningful artifacts to document their growth over time and to allow them to reflect on how skills they used to overcome challenges along the way.</li></ul>



Thanks for coming!  
we look forward to  
seeing you in 7th  
grade science!