



La Scuola middle school Math & Science

Let's dive into a couple learning experiences & objectives highlighted at La Scuola Spring 2024 Showcase

International Baccalaureate (IB MYP)

Subject area Inquiries

MYP Year-3 MATH UNIT-2 : How do we make choices?		
Key Concept	Related Concept	Global Context
Form	Equivalence, Representation	Fairness and development
STATEMENT OF INQUIRY: Real-life problems can be represented by different forms of mathematics which will yield equal results and a fair solution.		Knowledgeable We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.
Approach to Learning: Critical-thinking skills Communication skills		Assessments: Crit-A Crit-B Crit-C

MYP Year-3 SCIENCE UNIT -2 : How do our bodies work?		
Key Concept	Related Concept	Global Context
Systems	Balance, Function	Personal and cultural expression
STATEMENT OF INQUIRY: By understanding how our body systems function , people can learn to make decisions for balanced and healthy lifestyles.		Communicators We will practice being effective communicators as we share information about how the human body works with other teenagers.
Approach to Learning: Critical-thinking skills Communication skills		Assessments: Crit-A Crit-B Crit-C Crit-D

MYP Year-1 MATH UNIT-3 : How can data help us save the world?		
Key Concept	Related Concept	Global Context
Relationships	Representation, Justification	Globalization and sustainability
STATEMENT OF INQUIRY: Representing data visually helps to identify relationships that can justify global decisions.		Reflective We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weakness in order to support our learning and personal development.
Approach to Learning: Critical-thinking skills Reflection skills Communication skills		Assessments: Crit-A Crit-D

MYP Year-1 SCIENCE UNIT - 2 : What changes ?		
Key Concept	Related Concept	Global Context
Change	Form, Transformation	Fairness and development
STATEMENT OF INQUIRY: Science enables us to change the form of matters into useful materials that can make the world a better place .		Inquirer We will use observations to make new questions to explore.
Approach to Learning: Critical-thinking skills Creative-thinking skills		Assessments: Crit-B Crit-C Crit-D

Grade level - Yr 1 = 6th grade, Yr 3 = 8th grade

How do we make choices ?

The this **8th grade** inquiry in **mathematics**, students develop proficiency in

algebraic expressions, equations & coordinate geometry.

They explore real-life applications, including

quadratic functions & linear relationships,

We emphasize effective **communication** of their findings through presentations.

h 20 $7 \overline{) 24.00}$ $7 \overline{) 44.0}$ $-5.6y = 9.7$
 $\frac{21}{30}$ $\frac{42}{20}$ $\div -5.6$ $y = -1.7$ ①
 $4x - 9y = -16$ ②
 $\frac{7x}{7} = \frac{6y+11}{7}$ $\frac{44}{7} + \frac{24y}{7} - 9y = -16$
 $x = \frac{11+6y}{7}$ $\div \frac{44}{7}$
 $4(\frac{11+6y}{7}) - 9y = -16$ $\frac{24y}{7} - 9y = -16 + \frac{44}{7}$
 $\frac{44+24y}{7} - 9y = -16$ $3.4y - 9y = -16 + \frac{44}{7}$

These inquiries empower students to deepen their understanding, investigate mathematical concepts, and apply their knowledge in real-life scenarios.

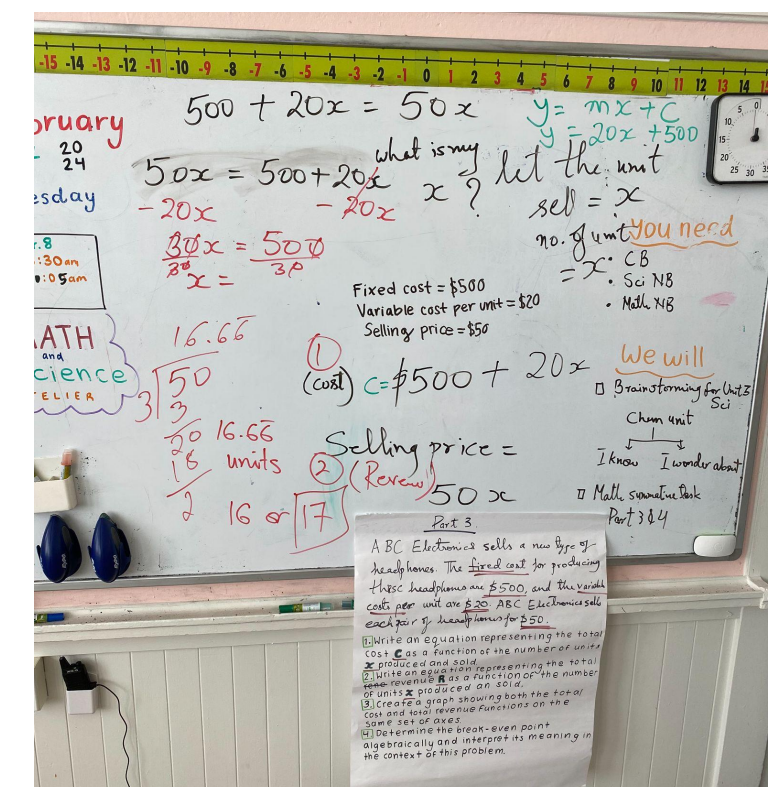
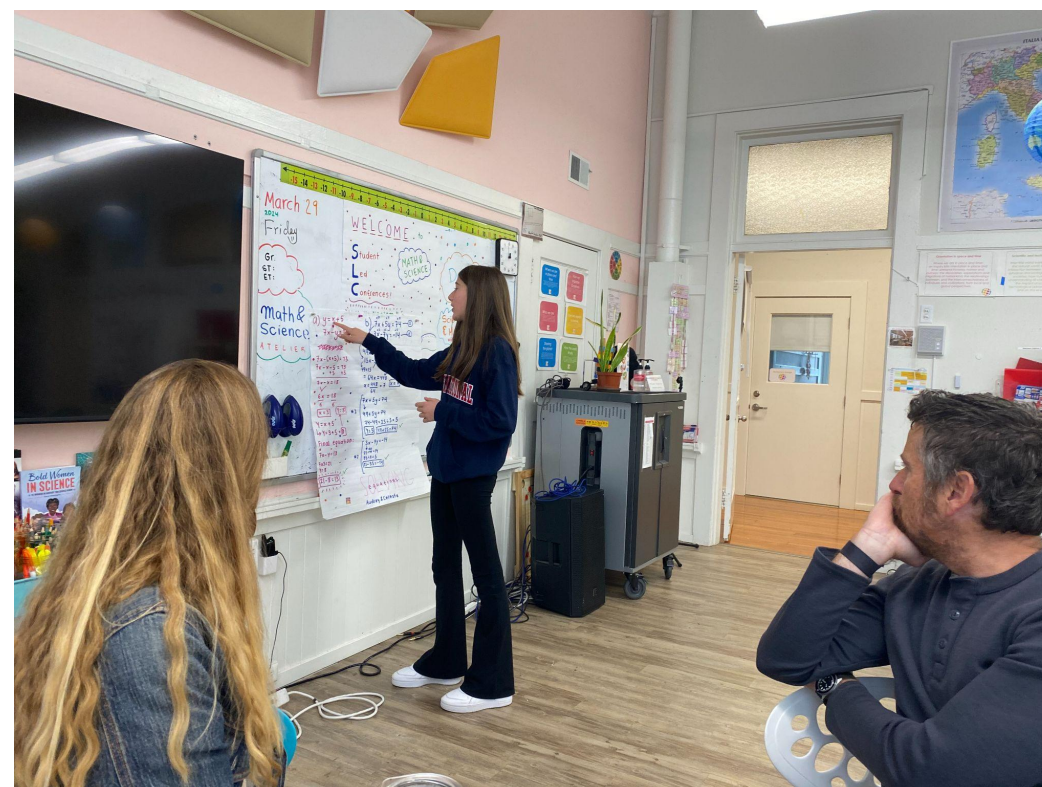
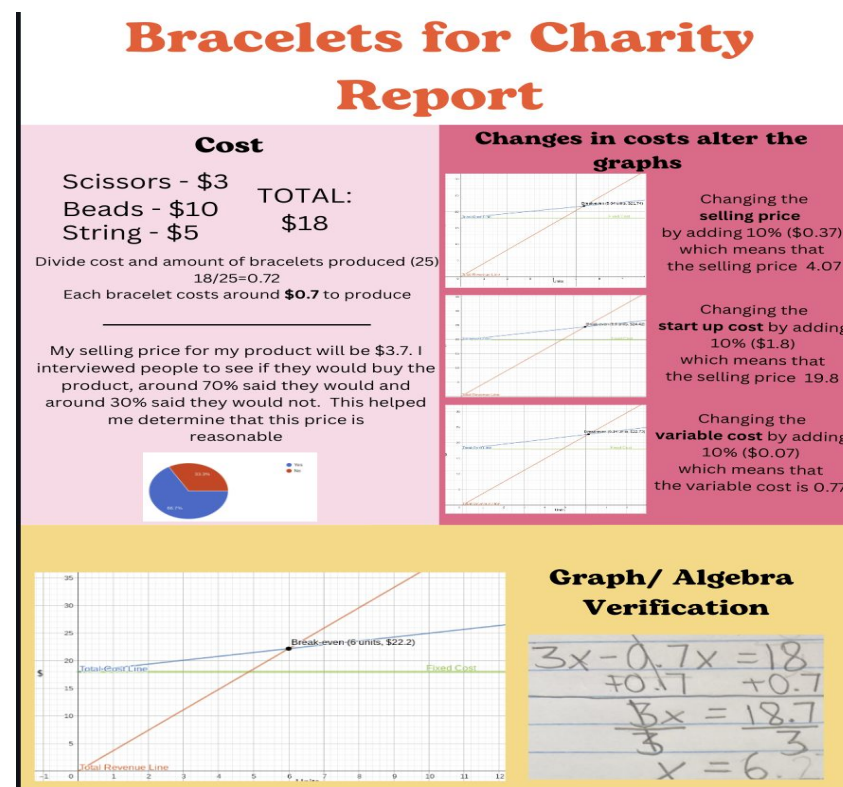
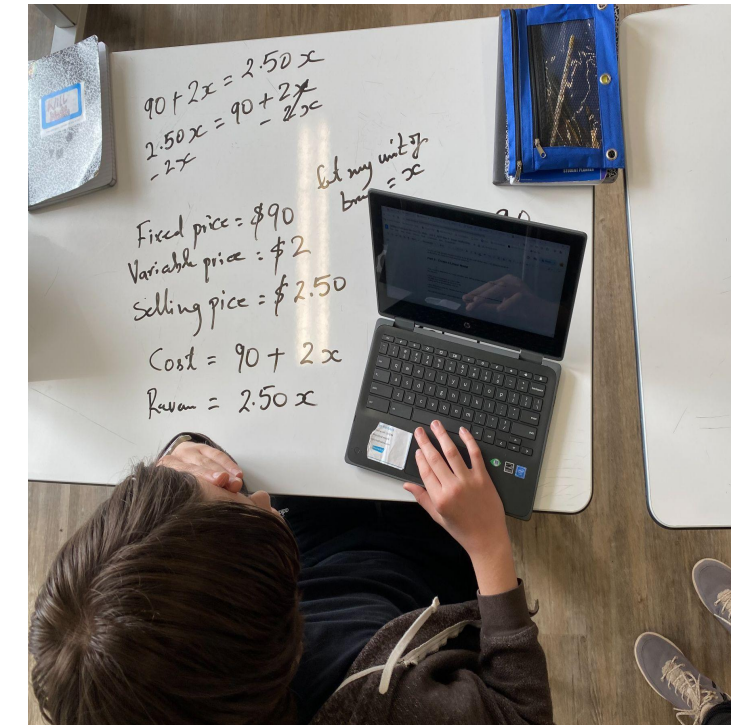
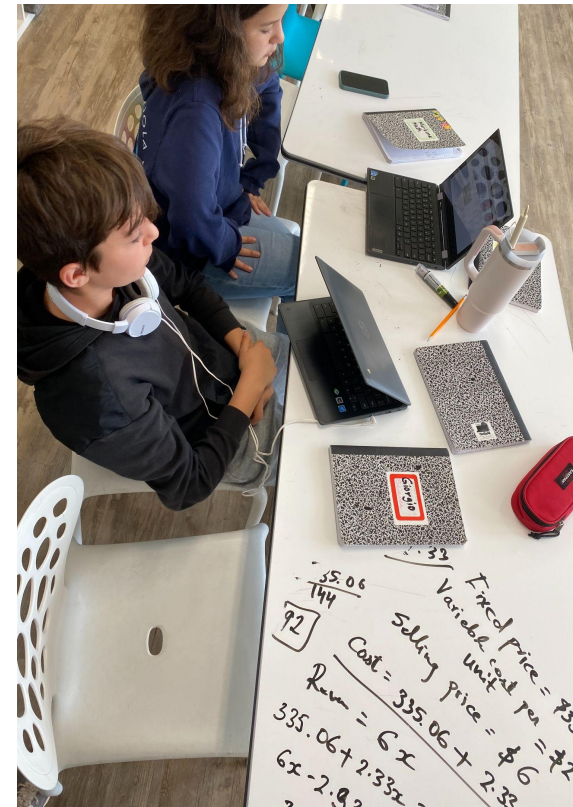
How do we make choices?

Application and Action

8th grade

Real-life situations modeled using algebraic expressions, equations, and coordinate geometry.

Effective communication of mathematical findings promote understanding and drive positive change in communities.



Students in IB MYP Year 3 Math engage in a project focusing on applying mathematical concepts in real-life business contexts. The project involves creating a flier that effectively summarizes a chosen charity or organization, presenting a clear list of costs with explanations and calculations, and accurately depicting cost and revenue functions graphically.

Students identify and verify the break-even point algebraically and explore how changes in costs and selling price affect graphs and break-even points through sketches. Additionally, students accurately represent the business model with cost and revenue equations, determine the break-even point using graph and algebraic methods, and calculate profit or loss for selling different quantities of the product.

Students thoroughly explore the impact of changes in start-up costs, variable costs, and selling price on the original line and point of intersection. Overall, the project demonstrates students' understanding of profit, loss, and break-even point concepts in real-life business scenarios.

MYP Year 3 Rubric

Math Criteria C and D

Criterion C: Communicating

- The flier effectively summarizes the chosen charity/organization.
- The list of costs is clearly presented with explanations and calculations.
- The graphical representation of the cost and revenue functions is accurate and clearly labeled.
- The break-even point is correctly identified and verified algebraically.
- The three sketches demonstrate an understanding of how changes in costs and selling price affect the graphs and break-even points.

Criterion D: Applying mathematics in real-life contexts

- The cost and revenue equations accurately represent the business model.
- The break-even point is determined correctly using the graph and algebraic methods.
- The calculations for the profit or loss when selling 10 units and 1000 units of the product are correct.
- The exploration of how changes in start-up costs, variable costs, and selling price affect the original line and the point of intersection is thorough and accurate.
- The report demonstrates an understanding of the concepts of profit, loss, and break-even point in a real-life business context.

What changes?

6th grade

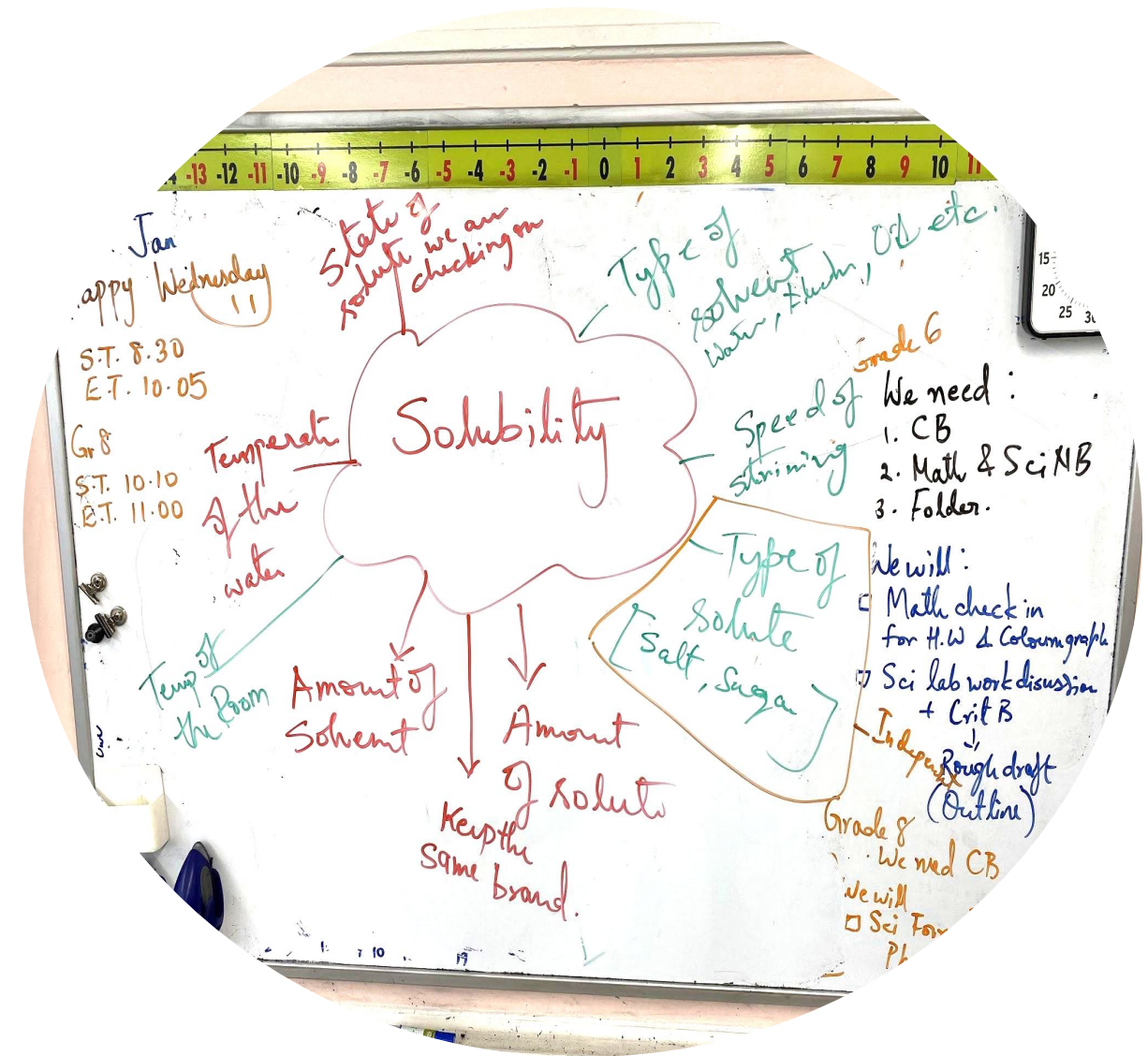
In this **6th grade inquiry in science**, students explore material transformations through experiments

investigating solubility
designing prototype water filters

And experiences are aligned with the **Sustainable Development Goal (SDG)** of clean water for everyone.

Students apply scientific methods and utilization of IB Approaches to Learning (ATL) skills, to demonstrate critical thinking and creativity in devising solutions to real-world challenges.

By researching countries facing water scarcity issues and proposing innovative water filter designs, students exemplified the IB learner profile attributes: knowledgeable, inquirers, and caring. Students commit to making a positive impact on global issues.



What Changes?

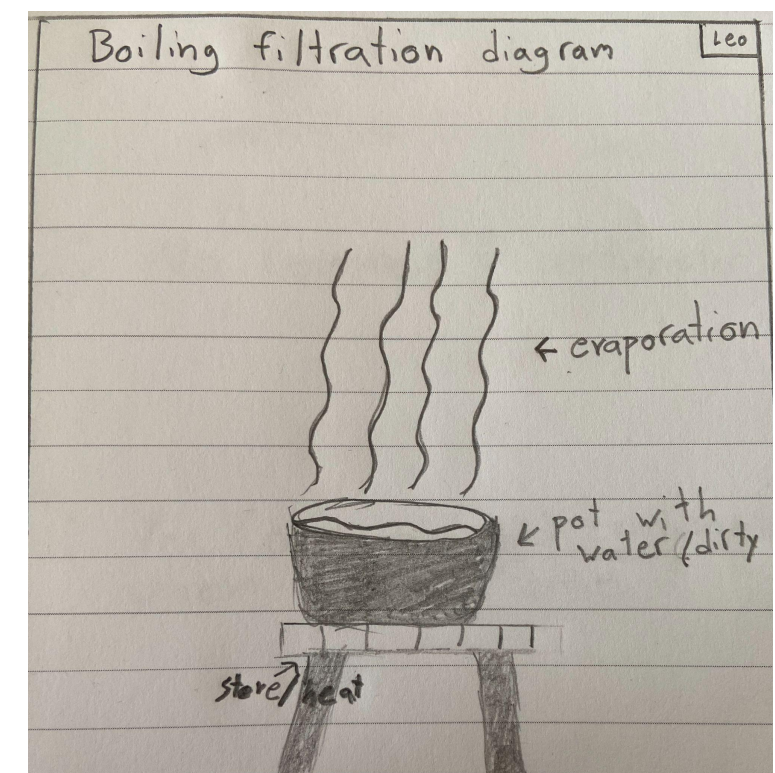
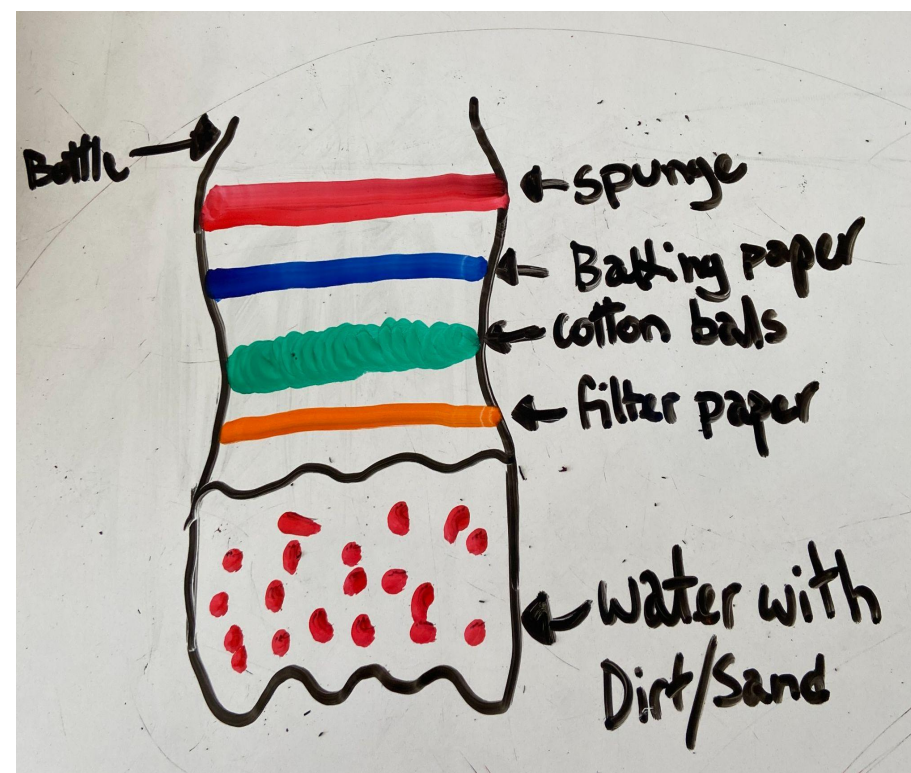
Application and Action

6th grade



Methods and materials can be utilized to address water pollution and scarcity issues, particularly in regions facing water challenges. How can these solutions contribute to achieving the Sustainable Development Goal of clean water for everyone?

Different materials interact and undergo changes when combined. How can these changes be harnessed to create new substances or purify existing ones?



An assessment during inquiry

Clean Drinking Water in Real Estate or Community

Congratulations on completing the filtration investigation task! Now, let's take your learning a step further by applying it to a real-world scenario. In this task extension, you will select a real estate or community facing the problem of clean drinking water. You will identify the issues they are facing, gather data if possible, analyze their situation, and propose a filtration process or design a filtration system to address their water quality concerns. Additionally, you will explore the connection between this issue and the Sustainable Development Goal (SDG) of the United Nations.

Rubric

Activity: Clean water for all !
Criterion B: Inquiring and designing
Maximum: 8

SUMMATIVE assessment task	
i outline an appropriate problem or research question to be tested by a scientific investigation	Complete – The student has outlined the problem of making a clean-water purifier in the form of a scientific inquiry question.
ii outline a testable prediction using scientific reasoning	Complete – The student has outlined a testable prediction that will allow them to measure the effectiveness of their water purifier (for example, by filtering and evaporating the filtrate and measuring residues).
iii outline how to manipulate the variables, and outline how data will be collected	Complete – The student has outlined how to control the variables for the clean-water purifier, including a description of how they will collect data on the purity of the water obtained (for example, by filtering and evaporating the filtrate and measuring residues).
iv design scientific investigations	Complete – The student has designed a method for carrying out each stage in the purification process, including a risk/safety assessment and environmental impact assessment.