

INTERDISCIPLINARY LEARNING

By Nick Graham, Fulbright Award Teacher

S - Science: Students are always interested in science – It's what we know about the world and how we got there. From warfare innovations to agriculture, photography, medicine, and industrial improvements, we can always find a scientific angle to make even a painting intriguing.

P - Personal Connection / Discussion: What does it mean to you? A personal connection might link the subject to what is happening now in our students' lives or our area or community. A structured discussion or debate can immerse students into

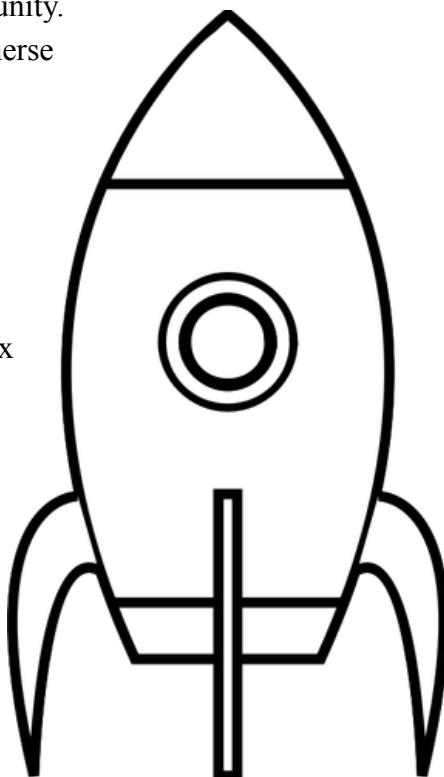
A - Art & Aesthetics: What performance, music, art, artifact or design can be integrated into the lesson? It can be as simple as a PowerPoint slide or as complex as an art project.

C - Curricular Relevance: How does it connect to what we're learning? Checking in with colleagues about what they're teaching opens up the context school-wide.

E - Everyday Object: A recurring life element like a cucumber, or something a student can hold that ties in to the overall study idea is a constant reminder. Almost anything can be turned into a bookmark.

S - Statistics & Data: What do the numbers tell us? Statistical trends, graphs, charts – all of these are important ways of bringing quantitative analysis into any focus.

H - History & Heritage: The historical context is a valuable insight into anything contemporary. Where did it come from? What were its causes and effects?



I - Institutions & Museums: Who are the experts and what are the primary sources? Local or nonlocal institutions can be thought of as people who can do some of the teaching for you.

P - Problem-Solving Opportunity: When students are engaged in a creative, problem-solving way, whether they are solving something central or peripheral to the focus, they get into the habit of approaching problems.

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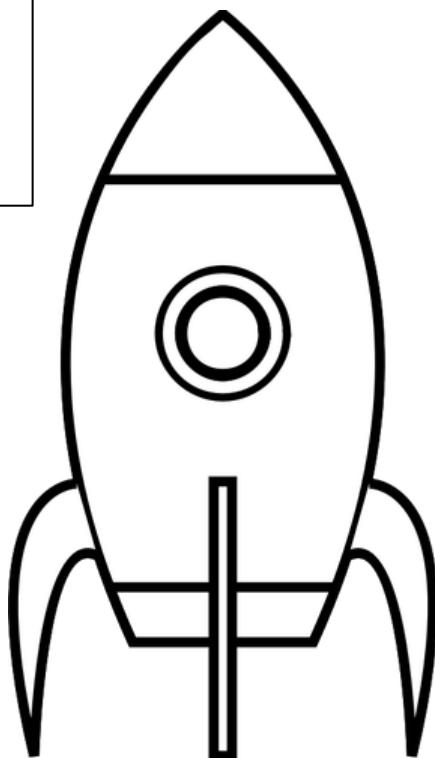
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SPACESHIP

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Core Idea: How does the cucumber matter in our lives?

S - Science: Plant biology – how is the cell structured to function? Endosymbiosis of chloroplasts and mitochondria. Diffusion experiments with cucumber slices, salt, and distilled water. Photosynthesis.

P - Personal Connection / Discussion:
fruits and vegetables which we eat and love

A - Art & Aesthetics: the art of the still life – plants in our lives and on our tables

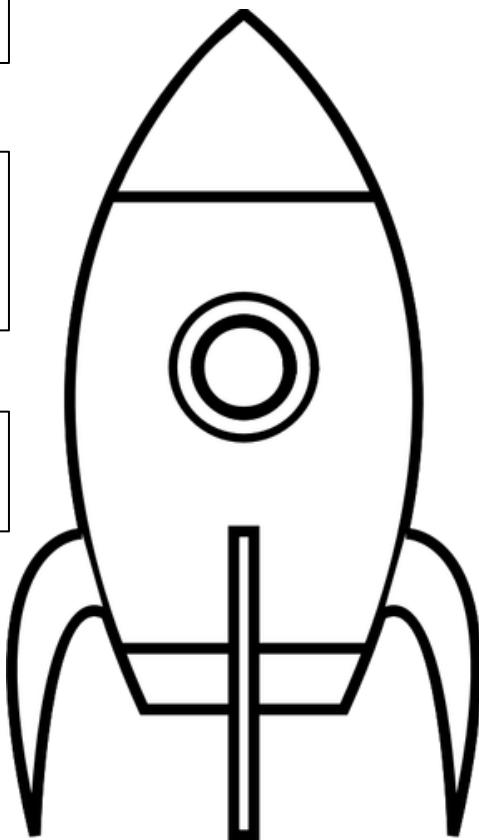
C - Curricular Relevance:
Any historical period can be connected to the grains, fruits, and vegetables of the people involved.

E - Everyday Object:
students can chew on a cucumber slice and observe how the seeds slip past the teeth. A cucumber can rot within an aquarium to observe why pickling was invented.

S - Statistics & Data: Demographics on agricultural workers, import/export graphs on specific farm products. How have botulism deaths declined with enhanced shipping and refrigeration?

H - History & Heritage: The origin of the cucumber is in ancient India, and we have references to its initial cultivation from Egypt and the Torah. Emperor Tiberius loved his cucumbers and perhaps made one of the first greenhouses to have them in the winter in Rome.

I - Institutions & Museums:
The botanical Gardens, a grocery store, a canning facility, a garden, are all places students can explore the topic and interact with experts.



P - Problem-Solving Opportunity: How does the random motion of molecules explain diffusion? Can you set up a model of how molecular motion leads to diffusion and osmosis?

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"Self Pity" by DH Lawrence

S - Science: How do feathers insulate? How do we maintain our own thermal equilibrium? What are the challenges to wildlife in a temperate winter? What is tuberculosis and how is it managed today?

P - Personal Connection / Discussion: What things do you have already memorized? Mnemonics? Songs? Poems? Your address? Your class schedule?

A - Art & Aesthetics: paintings of birds, professional recitations, your own drawing of this lack of self-pity.

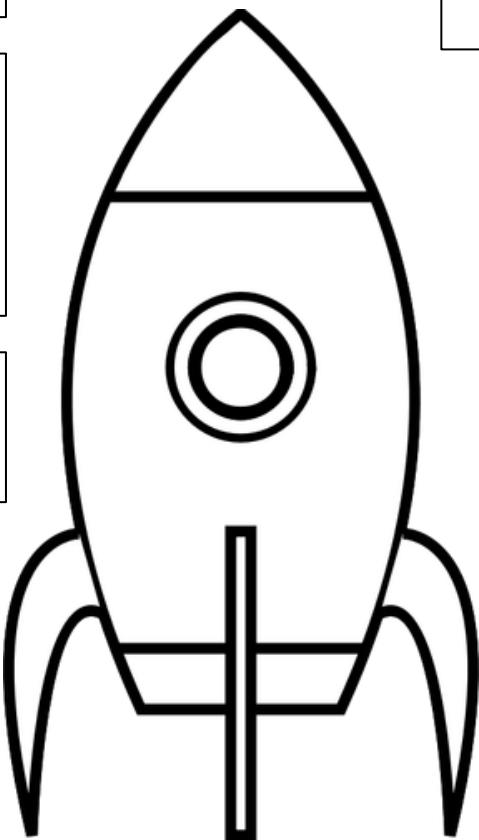
C - Curricular Relevance: Personification as a literary device, writing our own short observations and expressing insight from nature, public speaking explained through elements like volume, eye contact, expression, movement.

E - Everyday Object: A poem in your pocket and a guide to recitation rubric.

S - Statistics & Data: How difficult is it for a bird to survive? What percentage of laid eggs will develop into adult birds? How do the percentages of threats from disease, predation, accidental falls, starvation, and habitat destruction differ?

H - History & Heritage: How was poetry integrated into lifestyles in the past? How has English language poetry changed over the centuries, away from rhyme and meter into free verse?

I - Institutions & Museums: The zoo, an art museum, a poetry recitation, performance in general, all of these can support the unit. Even a walk through a local forest in the winter stitches this poem permanently into a students' understanding of what it really means.



SPACESHIP

P - Problem-Solving Opportunity: How can a poem be memorized optimally? What strategies should a student employ to break it up and keep it accurate? Can locational memory be coopted to memorize a poem and how can elements of expression be effectively used for success with different audiences?