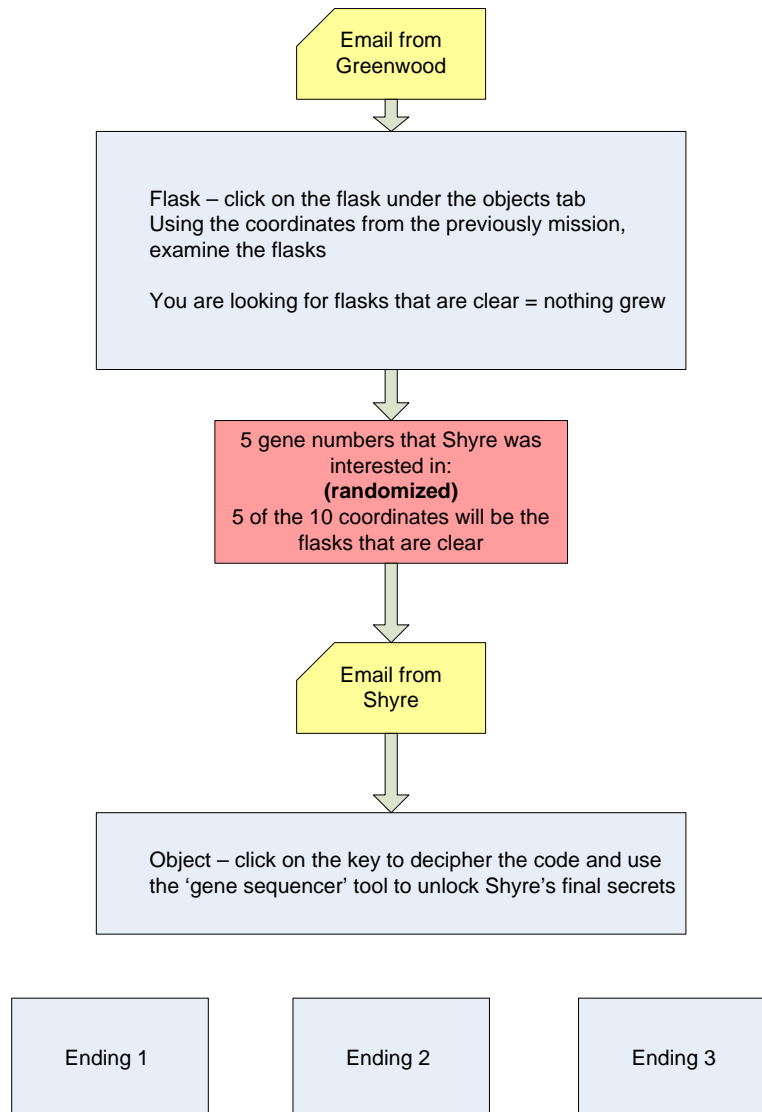


HISTORY OF BIOLOGY

■ Teacher's Walkthrough

MISSION 14: GET A LIFE

A) WORKFLOW



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■ Teacher's Walkthrough

B) EMAILS, CLUES, OBJECTS

	Contents	Explanation
EMAIL	<p>M14: INTRO EMAIL From: Dr. Jordan Greenwood Subject: The last experiment</p> <p>Dear user,</p> <p>I can see the same thing you can. From what I can tell from the setup of these flasks, it looks like Shyre was doing a deletion analysis. If I'm right, he would have been removing (or deleting) a gene from an organism's genome and looking to see whether the organism could survive without it. If the organism dies, that gene of interest is called an 'essential' gene, but if the organism survives, the gene of interest is called a 'non-essential' gene.</p> <p>Interesting... it looks like he was running an analysis on a bacterium and I can tell by the viscosity, it's definitely not <i>Thermus aquaticus</i>. If you click on a flask you can examine it. If the solution in the flask is clear, none of the bacteria grew. If it's cloudy, it is growing a nice thick colony of bacteria.</p> <p>Nicely done Shyre! Clever guy... he's encoded all his data in this experiment by assigning random numbers to all his culture flasks. I'm going to need you break the code here. Perhaps those 10 <i>Thermus aquaticus</i> genes are also found in this bacterium. See what you can do. I need that code!</p> <p>Dr. Greenwood</p>	
OBJECT	<p>Flask -click on the flask under the objects tab</p> <p>Using the coordinates from the previously mission, examine the flasks</p> <p>You are looking for flasks that are clear = nothing grew</p>	
CLUE	Enter in the codes on the correct flasks	They are randomized numbers and letters
EMAIL	<p>M14: VICTORY EMAIL From: Dr. Walden Shyre Subject: You've discovered the key!</p> <p>Nice job!</p>	

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	<p>You've discovered the complete encryption key. Now, activate the gene sequencer tool and use the key to unlock my secrets.</p> <p>WS</p>	
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Three Endings to choose from:

ENDING 1	<p>M14: ENDING 1 From: Dr. Jordan Greenwood Subject: Get rid of it!</p> <p>Dear user,</p> <p>I don't believe it... I can't believe he did this... what a fool!</p> <p>Do you know what this experiment is? It's the last piece in the puzzle to build synthetic life. He was probably working on one of the oldest and simplest single celled microorganism known in order to determine the minimum number genes required for life. This microorganism contains only 500 genes, of which 420 are essential for life.</p> <p>This is probably one of the most powerful technologies ever invented, to create life from scratch. Literally, one day someone could sit down at a computer, design a life form, and press "print". Everything will change. This will affect every aspect of our society, our culture, and future balance of life on earth. I'm sure people will do some good with it... but what about the bad?! We are not ready. This could destroy all the life on our planet.</p> <p>I can't let him do this. We can't let him do this. This work needs to be destroyed, it needs to be stopped. Click the link below to send me the data, I'll ensure that it never gets out. You need to trust me, this is the right thing to do.</p> <p>Dr. Greenwood</p>	
ENDING 2	<p>M14: ENDING 1 From: Dr. Walden Shyre Subject: Share your knowledge with humanity</p> <p>Dear user,</p> <p>We finally connect. I'm sorry that I have not been able to communicate with you directly until now, but</p>	

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	<p>communication where I am is difficult. I have asked a lot from you, but your job is not over just yet. One more thing remains.</p> <p>You have done an amazing job solving all the clues and unlocking my work. What I've been working on for the past three years is...synthetic life. Yes, synthetic life. Three years ago I began figuring out a minimum list of genes that are required for life. You saw some of that work in your last mission. Using naturally occurring materials and my artificially created bacterial genome, I figured out the recipe to put them all together... and the result was new bacteria...a new life...designed by me.</p> <p>It wasn't enough to just prove that it could be done, I needed to show the potential of this technology. I created a bacterium that could generate vast amounts of electricity. The proof is in your hands. The tablet computer you've been working on is full of bacteria, and the bacteria living inside are powering your computer. The entire computer itself is a living battery that will last for years.</p> <p>This is an exciting and dangerous technology, but it was inevitable and I certainly did not want this work to be controlled. I went into hiding to finish the proof and then wanted to freely give it to the world. If everyone has it, nobody can control it. Only then does humanity have a chance of benefiting from this. I've just loaded the final pieces of data onto the computer you have. You have the decryption code, and now... and now this is the only computer with all the pieces. I need you to send it out to the world!</p> <p>Undoubtedly, you've also been contacted by people who want to buy this technology or who want to bury it. Please don't be fooled. There are two sides to every coin, and some coins are not at all what they seem. I'm sorry to put this all on you, but if I kept all the data myself... they would have found it... and taken it!</p> <p>Click the link below to upload your data to our worldwide network.</p> <p>The choice is now yours... I trust you'll do the right thing!</p> <p>Walden A Shyre</p>	
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ENDING 3	<p>M14: ENDING 3</p> <p>From: Jack Champey Subject: Sell it to me!</p> <p>Hi user, Did you give my last email any thought? I'm prepared to make you a big offer.</p> <p>I know what Shyre has done and it's worth a lot of money. Synthetic life eh? I can't believe the old man did it. Think of what his work could do for humanity. Cure disease, create organisms that could clean up the environment, create microorganisms that could generate energy, food or clean water. This is the jackpot!</p> <p>Partner with us and my company, Universal Dynamic, and we can bring this technology to the world. We'll be famous, Shyre too, and we'll be richer than you could ever imagine.</p> <p>Click on the link below to establish a connection with our server and I'll be able to download the data from you directly. I know you'll do the right thing.</p> <p>Jack</p>	