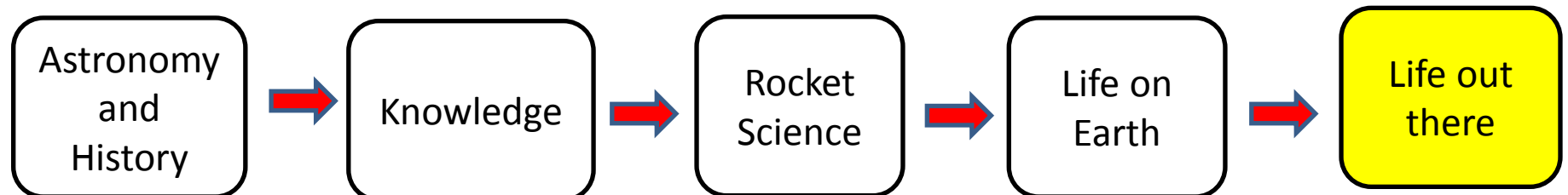


# E-M Spectrum and Space

## Space



## Section 5... Life out there ...



# By the end of this lesson you will be able to:

- describe some of the extreme conditions in which life can exist.
- make a reasoned argument about whether or not life exists elsewhere in the universe.

# Extremophiles

- Extremophiles are life forms that thrive outside the ranges life is commonly found in.
- Extremophiles were first discovered in the late 1960's in the hot springs of Yellowstone National Park. Since their discovery, scientists around the world have worked to find how extremophiles might be useful to humans.

## Examples of Extremophiles



Methane ice worm



The Pompeii worm



Tardigrades

- Choose 2 of the above extremophiles.
- Find out as much as you can about their lives.

# Name that Extremophile!

- Split into groups of 4.
- Your teacher will give you some 'post it notes' and a list of extremophiles and the environments in which they live.
- You have 2 minutes to look over the list and then put it away.
- Select one extremophile and write it's name on the 'post it note'.
- **Without looking at it**, someone else in the group must stick it on their forehead.
- Members of the group can take turns of describing the extremophile's environment until the person correctly guesses it name.

# Your Time is Up!



# SETI



The SETI Institute is a non profit making corporation whose aim is to find intelligent life beyond Earth!

SETI, the Search for Extraterrestrial Intelligence, began early in the Space Age. Only two years after the launch of Sputnik.

You can visit their website:

- <http://www.seti.org/page.aspx?pid=234>

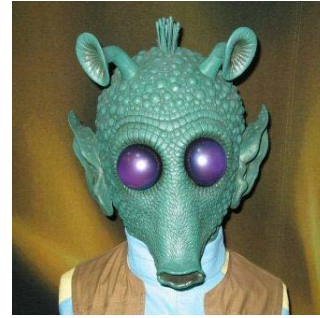
- View – Alien Speculation.
- <http://www.youtube.com/watch?v=ItA6TSraVZ8>

(2 minutes 44 seconds)

- Write down 2 key ideas from the short video.



# Are we alone?



- In groups discuss the likelihood of life (of any kind) existing elsewhere in the universe.
- Use the Solar System Fact File cards to help inform your opinion.
- Use what you have learned about space and extremophiles to support your argument.
- Present your ideas to the rest of the class.



**Folio Assessment!**



# Lesson Summary – Life out there ...

## Part 1

- Copy and complete:

Some extreme conditions in which life can exist are: (give 3 examples)

## Part 2

- Answer the following:
  1. Do you think basic life, such as extremophiles, could exist elsewhere in the universe? Give a reason for your answer.
  2. Do you think intelligent life, such as human beings, could exist elsewhere in the universe? Give a reason for your answer.