

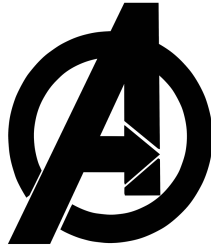
The logo features the word "AVENGERS" in a stylized, metallic font with a red "MARVEL" logo above it. Below "AVENGERS" is the word "S.T.A.T.I.O.N." in a large, blocky, metallic font. Underneath "S.T.A.T.I.O.N." is the text "SCIENTIFIC TRAINING AND TACTICAL INTELLIGENCE OPERATIVE NETWORK" in a smaller, sans-serif font. At the bottom right, there is a small copyright notice: "© MARVEL 2014".

ATTN: Potential Agents
RE: UNKNOWN ORGANISM

We have been receiving a number of unexplainable readings from our scanners off the coast of Bermuda (coordinates are 29° 15' latitude, -69° 53' longitude). We believe there is an organism trapped below the surface on the ocean floor. It is your job to run the correct analyses in order to conclude what this thing is and if it is a threat. We have included all of the data scans. This is a level 3 classified mission.

Form a team of scientists to investigate the anomaly that was detected off the coast of Bermuda. You are to find the cause of the anomaly, classify any potential life forms you find, and determine if the anomaly poses any threat. We have provided live scans and images of the area that will aid you in these tasks. Once you have completed your mission, you are to present your findings to your teacher, who is an undercover Agent of Avengers with level 5 classified clearance. Your teacher will then relay the information directly to Avengers. Good luck. The world is depending on you.

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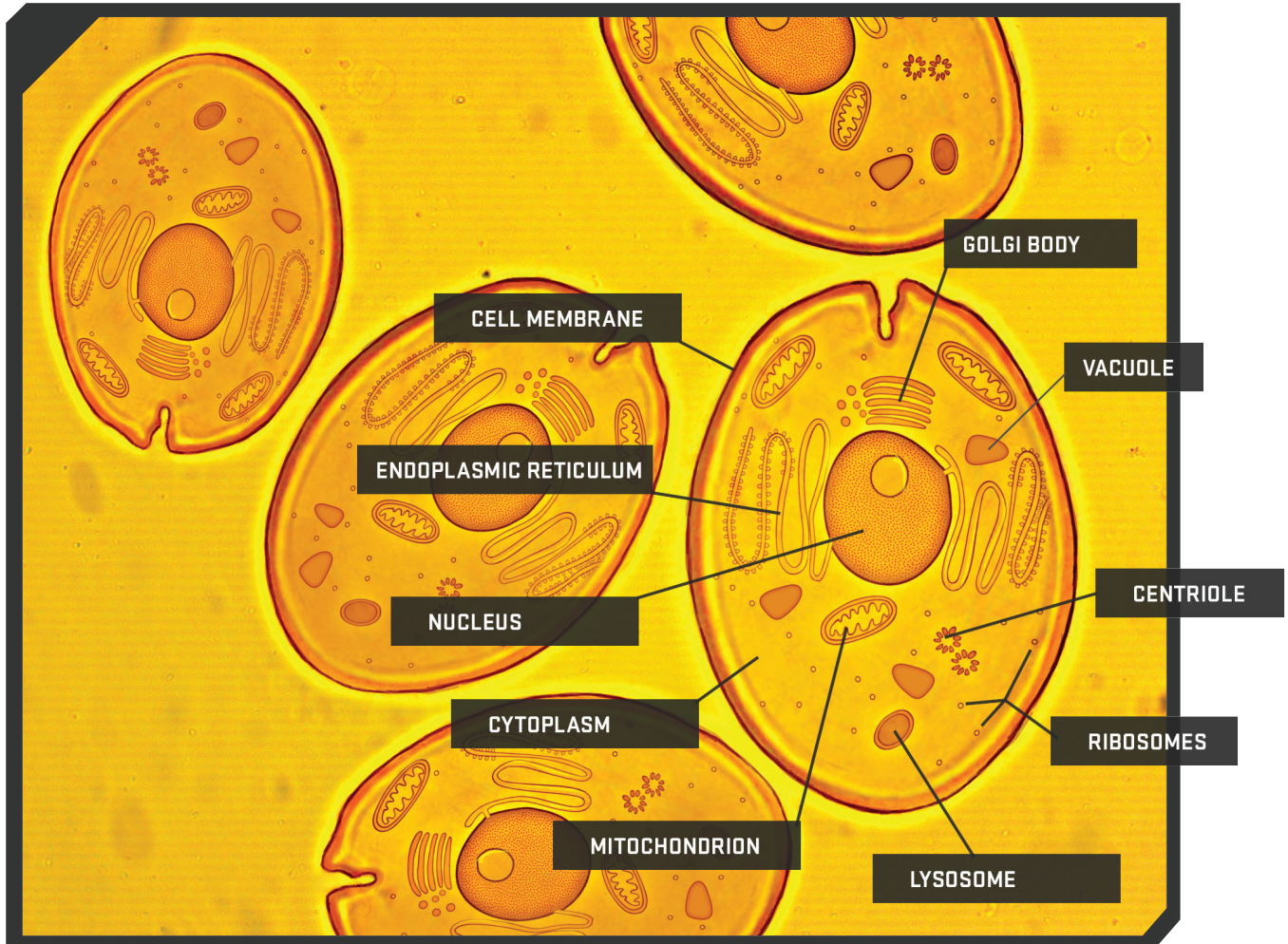
MISSION OVERVIEW_

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MISSION BRIEF_

Our scanners were able to collect a few cell cross sections from the area, an animal skin cell, a plant cell, and a cell of the new unknown organism. Compare the new cell to the animal and plant cells in order to gain a better understanding of the organism. When you have completed your analysis, present your findings to your teacher and enter them into the Avengers database.

[ANIMAL CELL]



CELL MEMBRANE - a semi-permeable membrane surrounding the cell allowing some substances to pass into the cell and blocking others.

CYTOPLASM - the gel-like material distributed throughout the cell in which the organelles are located.

MITOCHONDRION - The mitochondrion converts the energy stored in glucose into ATP (adenosine triphosphate) for the cell.

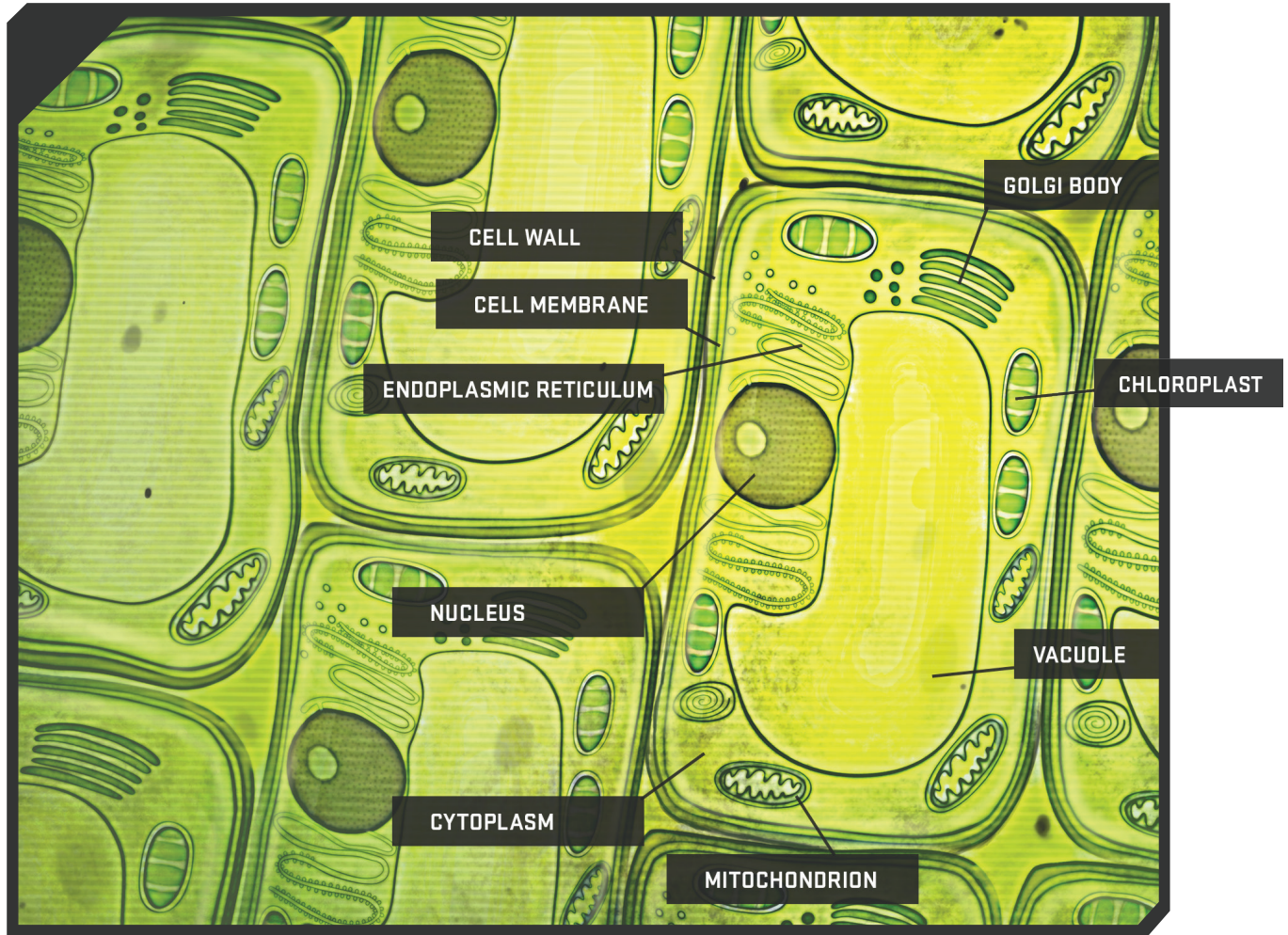
NUCLEUS - Spherical body surrounded by a membrane which dictates the function of the cell through protein synthesis. Contains the DNA of the cell (in chromosomes).

RIBOSOME - RNA rich organelle where protein synthesis occurs.

VACUOLE - fluid-filled cavities inside a cell. In plants, it is large and contains the water of the cell. In animals, the vacuole is much smaller and is also involved in waste disposal.

LYSOSOME - Contains powerful digestive enzymes that digest food, organelles, and bacteria.

[PLANT CELL]



CELL MEMBRANE - a semi-permeable membrane surrounding the cell allowing some substances to pass into the cell and blocking others.

CYTOPLASM - the gel-like material distributed throughout the cell in which the organelles are located.

MITOCHONDRION - The mitochondrion converts the energy stored in glucose into ATP (adenosine triphosphate) for the cell.

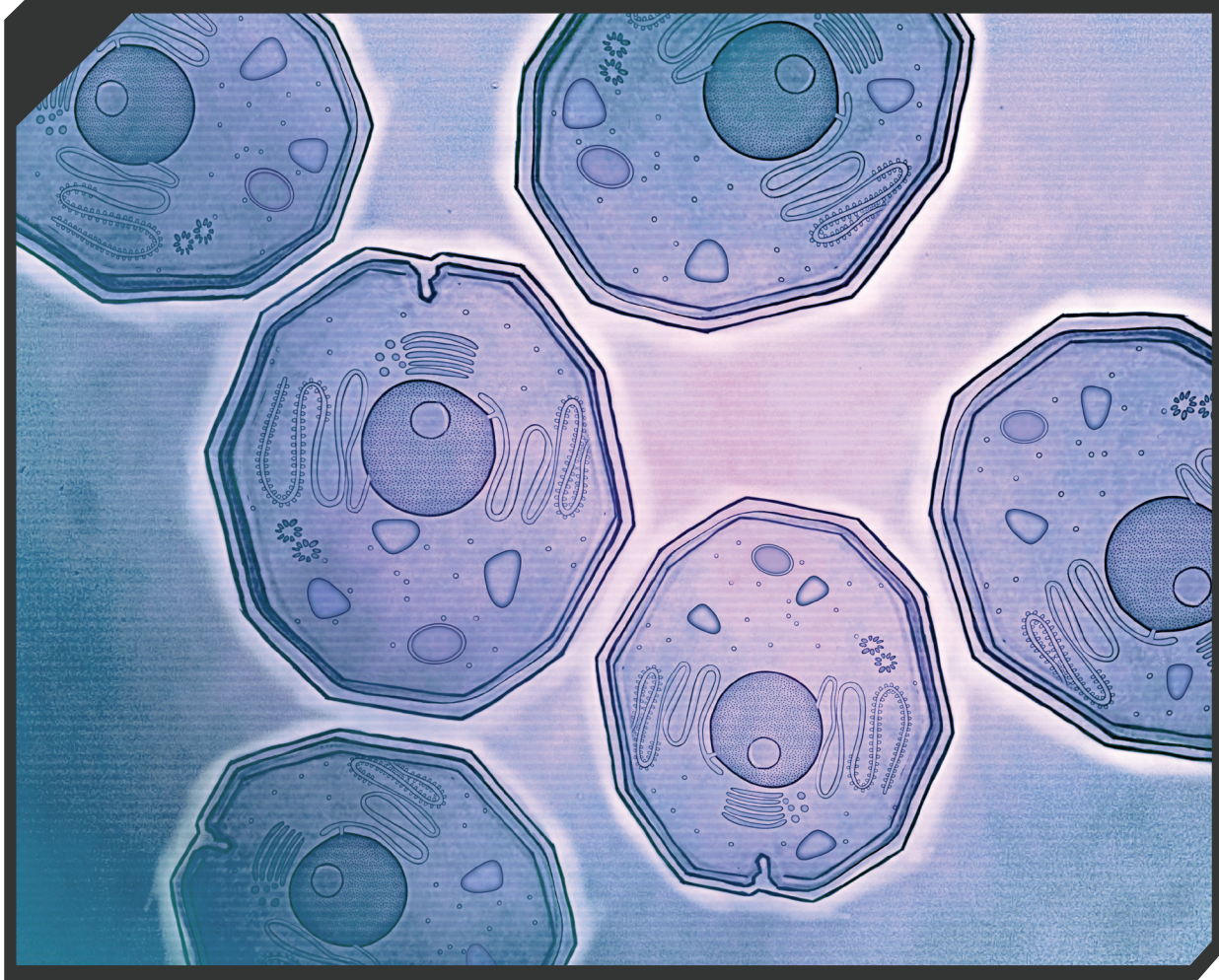
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VACUOLE - fluid-filled cavities inside a cell. In plants, it is large and contains the water of the cell. In animals, the vacuole is much smaller and is also involved in waste disposal.

CHLOROPLAST - Creates energy for plant cells through photosynthesis. Not present in animal cells.

CELL WALL - a somewhat rigid wall providing structural support that surrounds plant cells. Not present in animal cells.

[ANOMALY CELL]

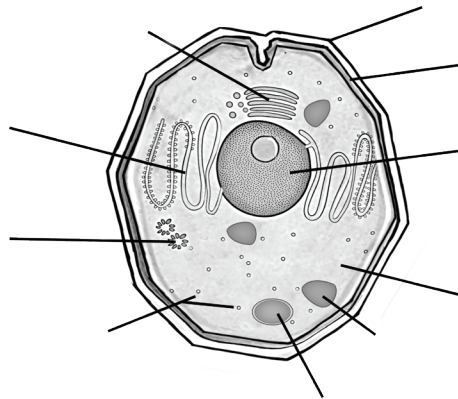


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Avengers Report:
Re: Unknown cell

Our scanners were able to collect a few cell cross sections from the area, an animal skin cell, a plant cell, and a skin cell of the new unknown organism. Compare the new cell to the animal and plant cells in order to gain a better understanding of the organism. When you have completed your analysis, present your findings to your teacher and enter them into the Avengers database.

1. Label the unknown cell.



2. What similarities does the new skin cell share with the plant cell?

Describe any differences.

3. What similarities does the new cell share with the animal cell?

Describe any differences.

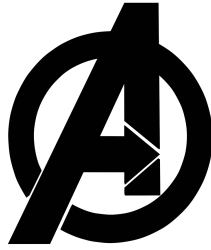
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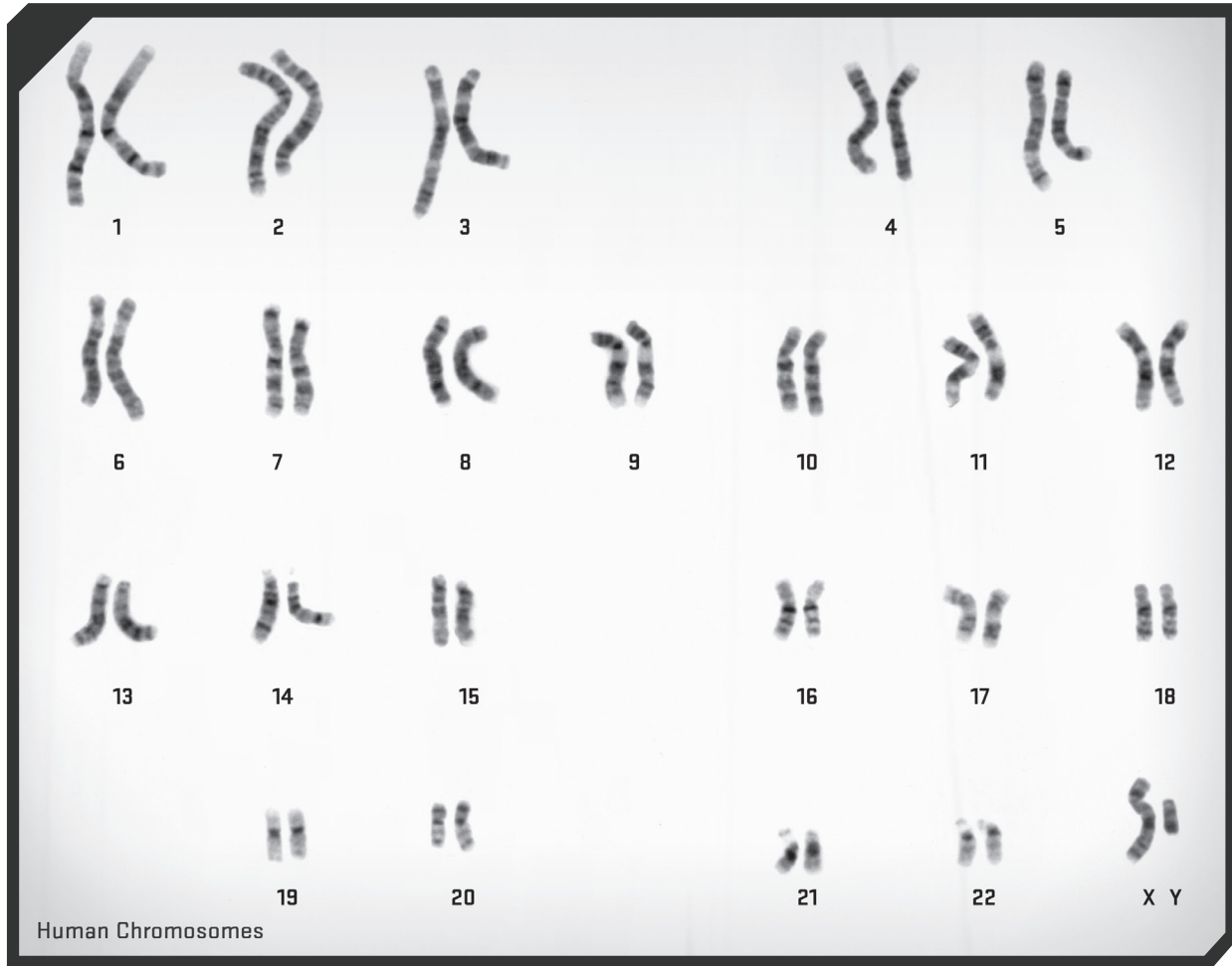
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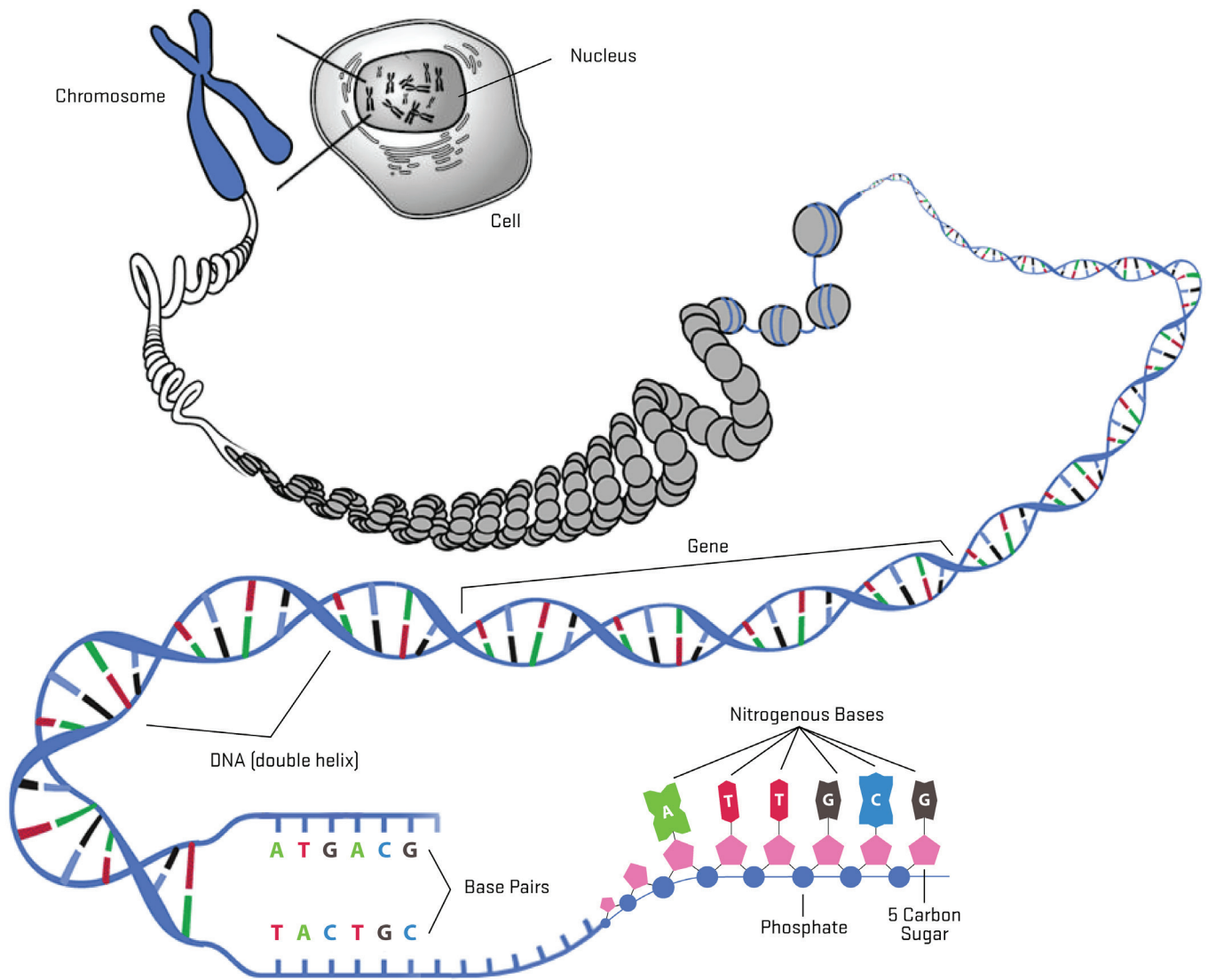
MISSION BRIEF_

Our advanced scanners were able to collect a few cell cross sections of the unknown organism. We ran a further analysis of the cell's nucleus and were able to get some information about the organism's DNA structure. We have also provided a scan of human DNA structure. To gain a better understanding of the organism, compare the new unknown cell's DNA to that of a human and enter your findings into the Avengers database.

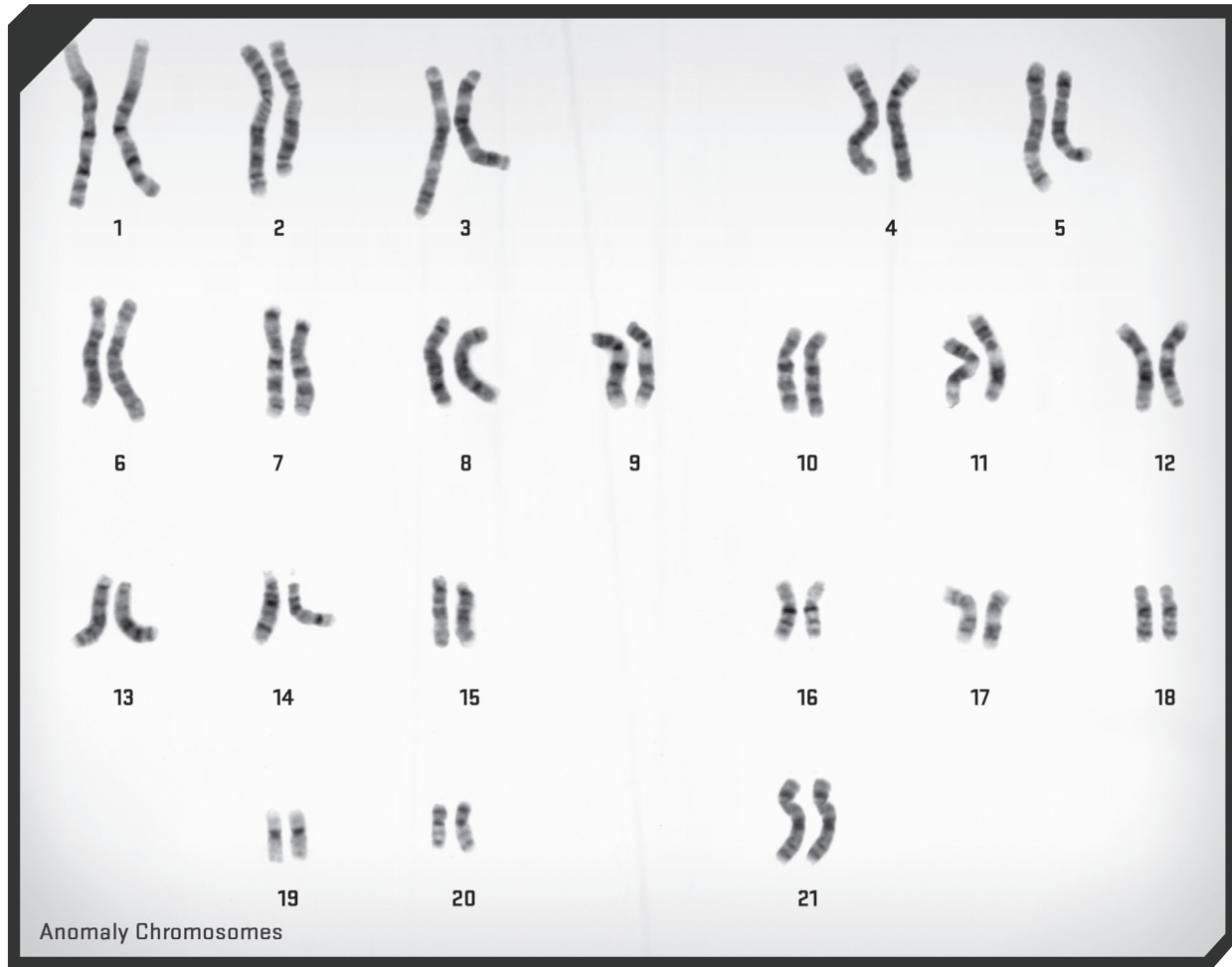
[HUMAN CHROMOSOMES]



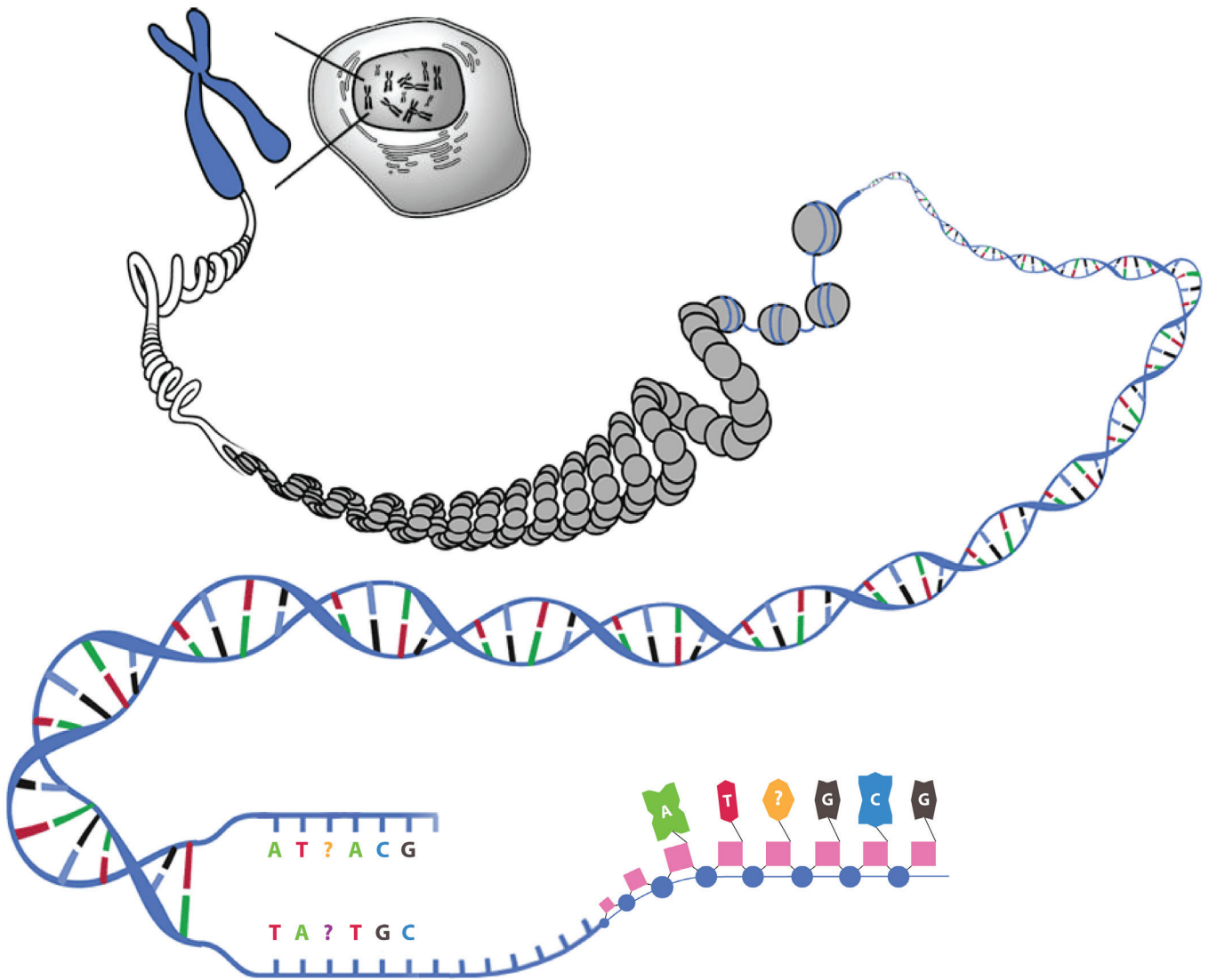
[HUMAN DNA]



[ANOMALY CHROMOSOMES]



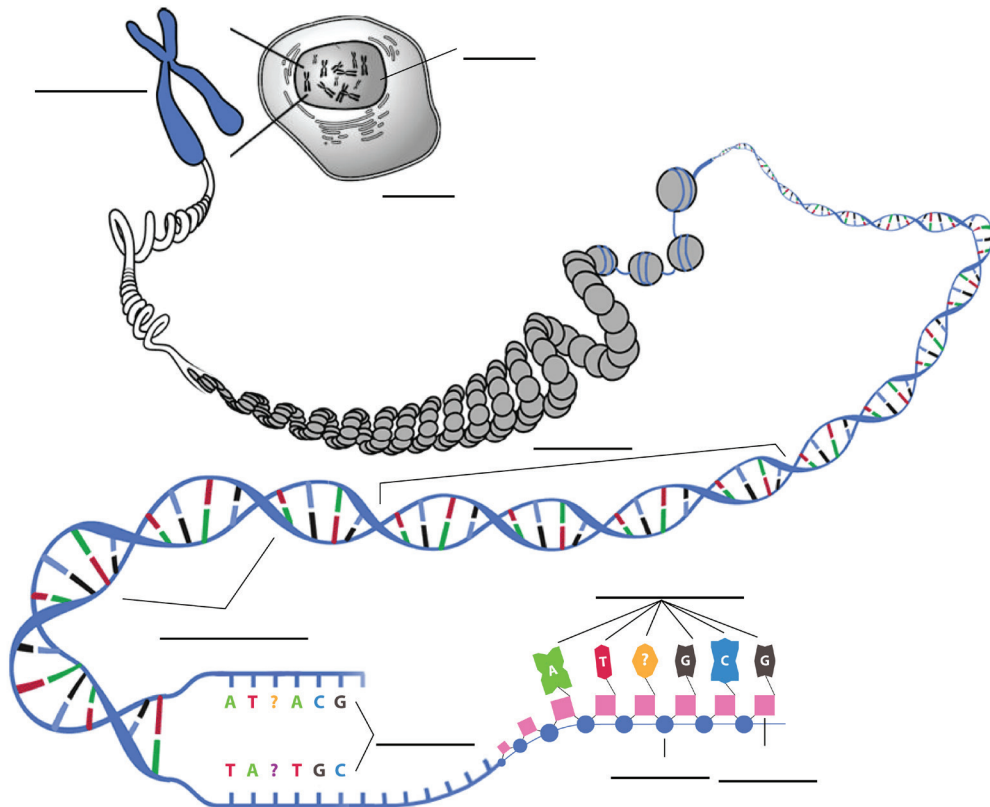
[ANOMALY DNA]



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Avengers Report:
Re: Brain analysis

1. Label the unknown DNA.



2. What similarities does the unknown DNA share with human DNA?

Describe any differences that exist.

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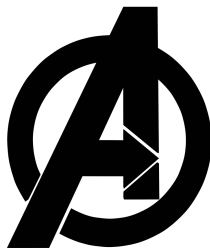
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MISSION BRIEF_

While the anomaly appeared to show no signs of brain activity, we sent a weak, controlled electrical pulse to its location at the bottom of the sea and received a response. Normally, it would require taking the subject's brain and putting it through an fMRI machine but with our Avengers satellite, we've been able to get an accurate fMRI scan of this anomaly's brain. An fMRI allows us to track brain activity, which may help us determine the behavioral patterns of this being and its species. In other words, we can see whether it is friendly or hostile. Our initial scans indicate that there are a number of similarities between the anomaly's brain and the modern human brain. However, there also appear to be some stark differences. We've provided you with three documents that should help you find out more about this creature.

- An annotated chart of the human brain
- An fMRI scan of an adult human brain at rest
- A Avengers Satellite fMRI scan of the anomaly's brain

We need you to analyze the three documents, compare and contrast the similarities/differences, and make postulations about the creature's behavioral patterns.

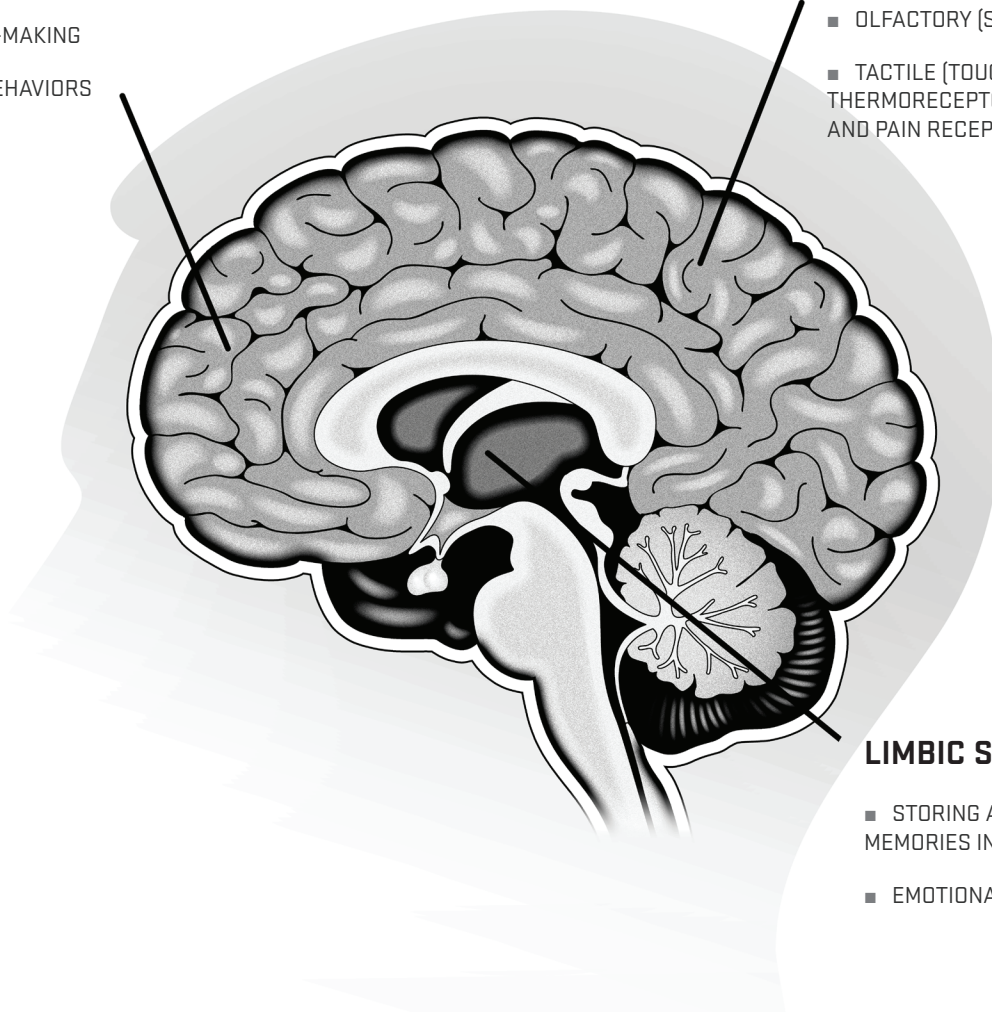
When you complete your task, input the findings into the Avengers search engine to find any known references.

PREFRONTAL CORTEX

- PERSONALITY EXPRESSION
- MODERATION OF EMOTIONS AND AGGRESSIVE BEHAVIOR
- DECISION-MAKING
- SOCIAL BEHAVIORS

SENSORY AREA

- AUDITORY
- VISUAL
- OLFACTORY (SMELL)
- TACTILE (TOUCH) - THIS INCLUDES THERMORECEPTORS (TEMPERATURE) AND PAIN RECEPTORS



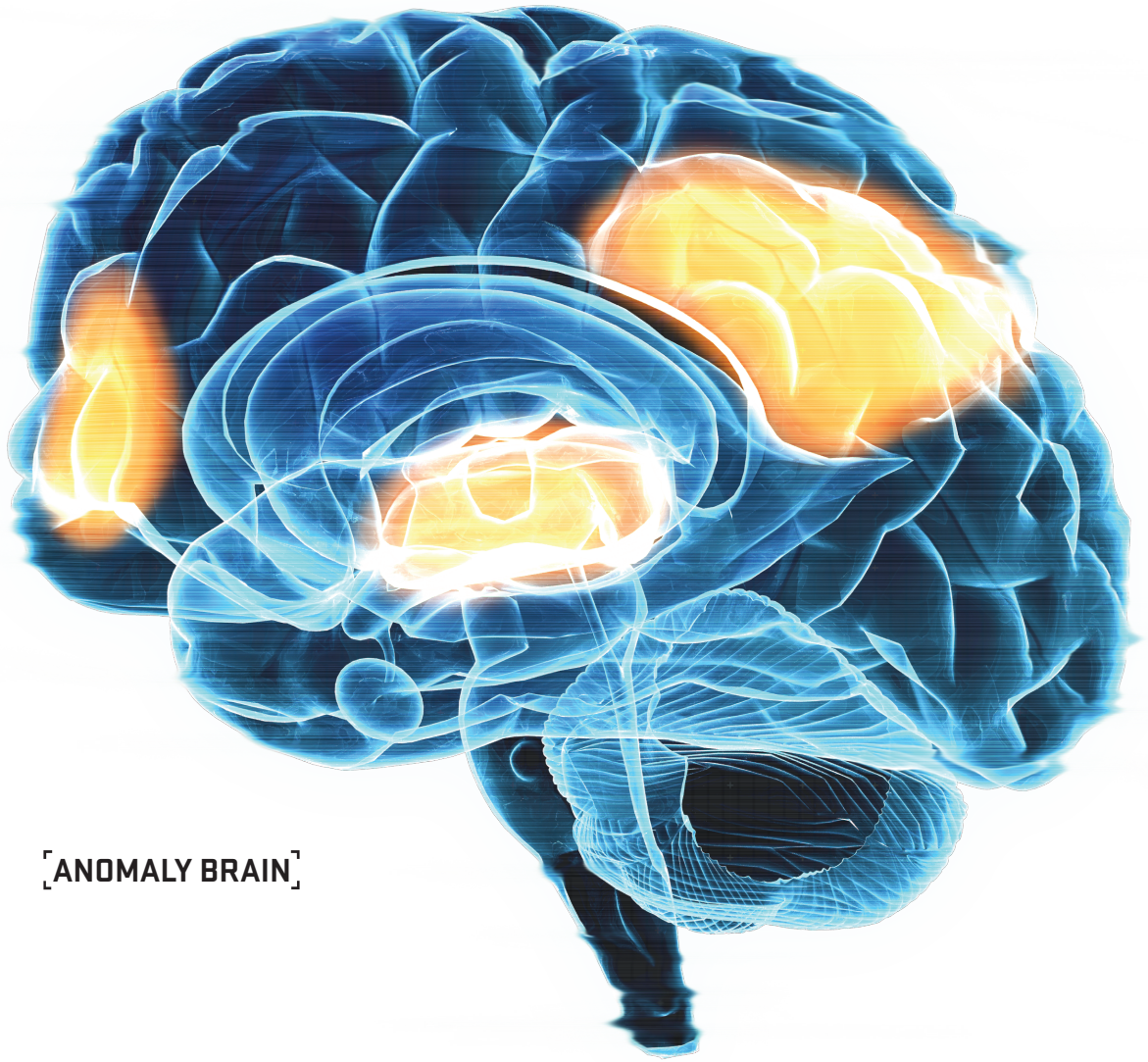
LIMBIC SYSTEM

- STORING AND PROCESSING OF NEW MEMORIES INTO LONG-TERM
- EMOTIONAL REACTIONS



[HUMAN BRAIN]

This is an fMRI scan of a human brain at rest, which means the person is awake but stationary. Areas of the brain that are highlighted in yellow indicates that that part of the brain is currently displaying increased activity.



[ANOMALY BRAIN]



Avengers Report:
Re: Brain analysis

1. From the brain scans, what similarities do you see in the shape of the human brain compared to the shape of the unknown brain?
 - a. What differences do you see in the shape of the two brains?

2. From the brain scans, what similarities do you see in the activity of a normal human brain compared to the activity of the unknown brain?
 - a. What differences do you see in the activity of the two brains?

3. Based on your observations from the four previous questions (1 - 2a.), what postulations can you make about the unknown creature based on the brain scans?
 - a. Prefrontal Cortex:

 - b. Limbic System:

 - c. Currently, based on your research, do you believe that the unknown creature is friendly or hostile? Explain.