

Time	Q:	Study guide/homework for PBS NOVA "JUDGMENT DAY" documentary
0-5	1.	<p>The basic premise of Intelligent Design is that:</p> <ul style="list-style-type: none"> a. Evolution is the result of scientific inquiry b. Intelligent Design simplifies the process of natural selection c. Living organisms are too complex to have evolved naturally d. Living organisms are too simple too have evolved naturally
5-10	2	<p>According to Dover science teachers Dover School Board member Alan Bonsell believed that the Earth was:</p> <ul style="list-style-type: none"> a. No more than four million years old b. Approximately 4000 years old c. Approximately 10,000 years old d. Indeterminate
10-15	3	<p>After the Scopes trial, textbook publishers:</p> <ul style="list-style-type: none"> a. Decided that evolution was too controversial and removed the topic from textbooks b. Decided that evolution was to included only in college textbooks c. Decided that evolution should be included in all textbooks d. Were prohibited from including evolution in their textbooks
	4	<p>In 1987 the Supreme Court decided that:</p> <ul style="list-style-type: none"> a. Teaching evolution in public schools was supported by the Constitution in Establishment Clause b. Teaching creationism in public schools was supported by the Constitution in Establishment Clause c. Teaching evolution in public schools was prohibited by the Constitution in Establishment Clause d. Teaching creationism in public schools was prohibited by the Constitution in Establishment Clause
	5	<p>Darwin called the process of evolution</p> <ul style="list-style-type: none"> a. "Natural selection" b. "spontaneous generation" c. "Darwinism" d. "Random selection"
15-20	6	<p>The statement that "various forms of life began abruptly" ... "with their distinctive features already intact: fish with fins and scales, birds with feathers, beaks and wings, et cetera" is from:</p> <ul style="list-style-type: none"> a. On the Origin of the Species b. The Principia c. Of Pandas and People d. Descent With Modification

20-25

||
PAUSE
video
at
25:03

This portion of the documentary invites a little more discussion that is relevant to this course.

Steve Fuller:

“One way to get into the concept of intelligent design is by imagining what it would be like to run across something like this on the beach: "John Loves Mary." I mean, this is the sort of design that's very unlikely just to have assembled itself just from sand blowing randomly over even a very long period of time. Rather, it shows a sign of some sort of intelligence that's behind it.”



Steve Fuller’s statement sounds plausible at first blush, but I hasten to add that this approach can lead us down the primrose path, and here’s a real world example why. In 1976 NASA’s probe Voyager shot this low-resolution photo of the Martian surface as it flew by:

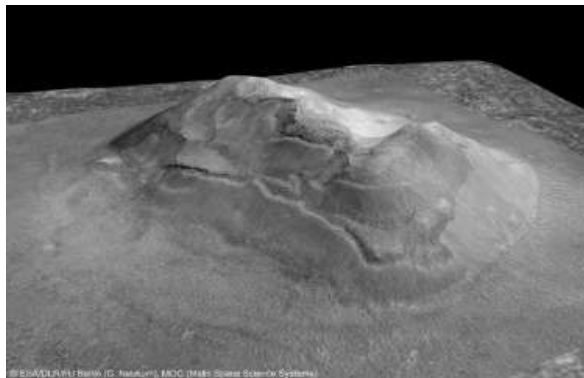


Known forever more as “the Face on Mars,” this photo stirred up a world-wide hornet’s nest, as you can well imagine.

It seemed, at last, we had compelling evidence of **intelligent** life on Mars!

But wait – there’s more!

Years later subsequent missions to Mars with much higher photographic resolution capabilities revealed that it was just a simple, naturally occurring formation:



Does anyone remember the Old Man of the Mountain in the New Hampshire White Mountains?




Moral of the story:
He who jumps to conclusions in science often lands in a bucket of doo-doo.

PLAY

25-30		
30-35	7	The memo that proclaimed, "Intelligent design is not science. Intelligent design is not biology. Intelligent design is not an accepted scientific theory" came from: a. Dover School Board b. Thomas Moore Law Center c. Of Pandas and People d. Dover science teachers
	8	The statement that Darwin's "theory is not a fact. Gaps in the theory exist for which there is no evidence" was read to the students by: a. The Assistant Superintendent b. The Superintendent c. Chairman of the School Board d. Spock
35-40	9	Both sides asked the judge to rule on the question: a. Is evolution science or not? b. Is intelligent design science or not? c. Is evolution religion-based? d. If you ain't disgruntled, does that mean you is grunted?
40-45	10	According to current theory, primitive fish evolved into amphibians a. Three and a half billion years ago b. Ten thousand years ago c. 375 million years ago d. 375 thousand years ago
	11	The discovery of Tiktaalik is an example of: a. Hypothesis, prediction, testing b. Idealization c. Creating a model d. Authority-based knowledge
45-50	12	Why did they not use the example of Tiktaalik in court? a. The discovery had not yet been written up for peer review b. It was only hypothetical c. It was disproven by subsequent research d. It happened after the court case

	13	<p>The ancient extinct animal “Archaeopteryx” is an example of a:</p> <ul style="list-style-type: none"> a. Primitive bird b. Dinosaur c. Reptile d. Transitional fossil
50-55	14	<p>What “gap” in evolutionary theory challenged the idea of common genetic ancestry of humans and apes?</p> <ul style="list-style-type: none"> a. Both humans and apes share the same number of chromosome pairs b. Apes have 23 chromosome pairs and humans have 24 chromosome pairs c. Apes have 24 chromosome pairs and humans have 23 chromosome pairs d. Apes have different chromosome pairs than humans
	15	<p>What testable prediction resolved the discrepancy described in Q 14?</p> <ul style="list-style-type: none"> a. It was later discovered that apes had one fewer chromosome than originally thought b. Two ape chromosomes were identical to one human chromosome c. One human chromosome was comprised of two chromosomes fused together d. One ape chromosome was comprised of two chromosomes fused together
55-60	16	<p>Why is supernatural causation not considered to be part of science?</p> <ul style="list-style-type: none"> a. It cannot be put to scientific test b. It is not part of general theory c. Because of scientific consensus d. Because Chuck Norris
1:00-1:05		
1:05-1:10	17	<p>The idea that living systems are so complex that the removal of a single part renders them inoperative and thereby impossible to evolve naturally is called:</p> <ul style="list-style-type: none"> a. Descent by design b. Primordial creation c. Selection by design d. Irreducible complexity
	18	<p>What organism does Michael Behe cite as an example of irreducible complexity:</p> <ul style="list-style-type: none"> a. Telemere b. Bacterial flagellum c. Centromere d. Bubonic plague bacterium

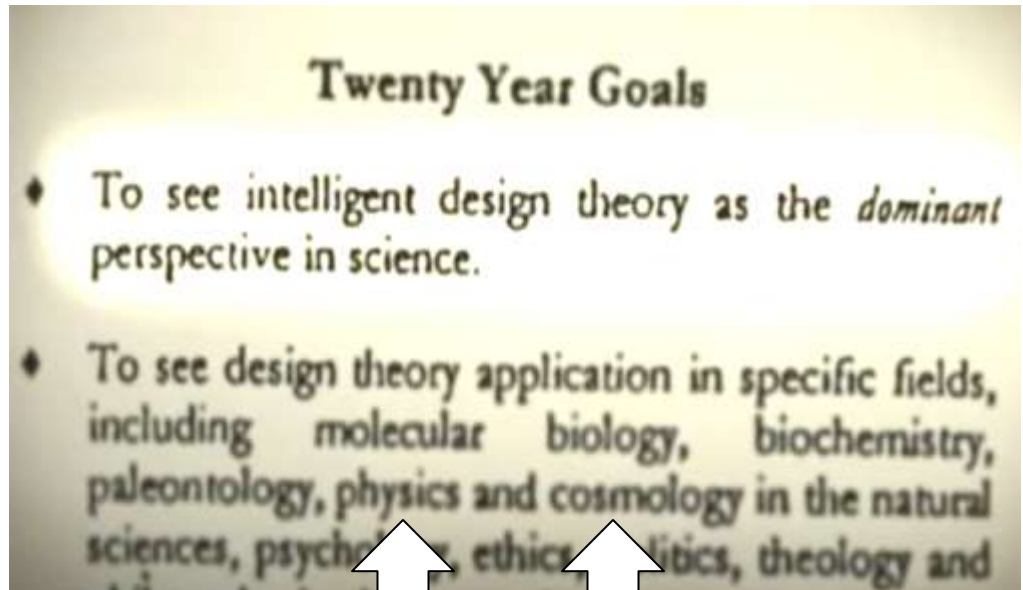
1:10-1:15	19	<p>What organism does David Derosier cite to refute irreducible complexity?</p> <ul style="list-style-type: none"> a. Telemere b. Bacterial flagellum c. Centromere d. Bubonic plague bacterium
	20	<p>What did Kenneth Miller bring to court to refute the hypothesis of irreducible complexity?</p> <ul style="list-style-type: none"> a. A fully functional mousetrap b. A transitional fossil c. Bacterial flagellum d. A mousetrap with pieces missing
1:15-1:20	<p>ROBERT MUISE (Dramatization): Now, Dr. Minnich, a complaint that's often brought up—and plaintiffs' experts have brought it up in this case—is that intelligent design is not testable. It's not falsifiable. Would you agree with that claim?</p> <p>SCOTT A. MINNICH (Dramatization): No, I don't. I have a quote from Mike Behe: "In fact, intelligent design is open to direct experimental rebuttal. To falsify such a claim, a scientist could go into the laboratory, place a bacterial species lacking a flagellum under some selective pressure, for motility, say, grow it for 10,000 generations and see if a flagellum or any equally complex system was produced. If that happened my claims would be neatly disproven."</p> <p>ROBERT MUISE (Dramatization): Is that an experiment that you would do?</p> <p>SCOTT A. MINNICH (Dramatization): You know, I think about it. I'd be intrigued to do it. I wouldn't expect it to work. But that's my bias.</p> <p>STEPHEN HARVEY (Dramatization): Now you claim that intelligent design can be tested, correct?</p> <p>SCOTT A. MINNICH (Dramatization): Correct.</p> <p>STEPHEN HARVEY (Dramatization): Intelligent design, according to you, is not tested at all, because neither you nor Dr. Behe have run the test that you, yourself, advocate for testing intelligent design, right?</p> <p>SCOTT A. MINNICH (Dramatization): Well, turn it around in terms of these major attributes of evolution. Have they been tested? You see what I'm saying, Steve? It's a problem for both sides.</p>	
<p>II PAUSE video at 1:19:30</p>	<p>POINT OF ORDER: SCOTT A. MINNICH, a supporter of Intelligent Design states: "Well, turn it around in terms of these major attributes of evolution. Have they been tested? You see what I'm saying, Steve? It's a problem for both sides." I find this interesting because, as we have seen in this presentation, evolution has in fact been subjected to constant, rigorous testing (the gold standard in science) and hasn't failed once. Remember: This is <i>not</i> about whether creationism (or Intelligent Design) is right or wrong - it's about meeting the standard of a <u>scientific theory</u>.</p>	

<p>PLAY</p> 	
1:20-1:25	
1:25-1:30	<p>21 What did Barbara Forrest discover as she was researching the origins of “Of Pandas and People”?</p> <ol style="list-style-type: none"> The original draft used the word “creation” and the later draft changed the word to “intelligent design” The original draft used the words “intelligent design” and the later draft changed the word to “creation” The original draft used the word “intelligent design” and kept it in subsequent revisions The original draft used the word “creation” and kept it in subsequent revisions
1:28:55	<p>NARRATOR: Barbara Forrest's testimony not only traced the creationist lineage of <i>Pandas</i>. Citing a Christian magazine's interview, Forrest let one of the intelligent design movement's own leaders, Paul Nelson, speak for himself.</p> <p>BARBARA FORREST: The question he was asked was, "Is intelligent design just a critique of evolutionary theory or does it offer something more? Does it offer something that humankind needs to know?" This is his answer: "Easily, the biggest challenge facing the I.D. community is to develop a full-fledged theory of biological design. We don't have such a theory right now, and that's a real problem. Without a theory, it's very hard to know where to direct your research focus. Right now, we've got a bag of powerful intuitions and a handful of notions, such as irreducible complexity, but as yet, no general theory of biological design."</p>
<p>II</p> <p>PAUSE</p> <p>video</p> <p>at</p> <p>1:31:21</p>	<p>POINTS OF ORDER:</p> <ol style="list-style-type: none"> Note here that one the founders of Intelligent Design concedes that Intelligent Design is not a true scientific theory, but merely a set of hypotheses. The “Ether Theory” was never a full-fledged scientific theory. It was at best a working hypothesis, and we’ll discuss it in more depth later on See also that Michael Behe defines a scientific theory as “a proposed explanation which focuses or points to observable physical data and logical inferences.” Where did we first encounter Behe’s explanation? (Hint: Historical Figures)
1:30-1:35	<p>22 Michael Behe’s definition of a scientific theory is based on:</p> <ol style="list-style-type: none"> Galileo’s Scientific Method Newton’s refinement of the Scientific Method Aristotle and Pythagorean philosophy Tik Tok
	<p>23 According to Michael Behe, <u> ? </u> may also be considered a branch of science</p> <ol style="list-style-type: none"> Alchemy Astrology Astronomy Phrenology

POINT OF ORDER:

NARRATOR: According to the Wedge document, Darwin "portrayed humans not as moral and spiritual beings, but as animals," leading people to abandon "objective moral standards."

The document lays out an ambitious agenda to overthrow this legacy, "to see intelligent design theory as the dominant perspective in Science," and "to see design theory permeate our religious, cultural, moral and political life."



Just in case you're still wondering why we're spending so much time on a case involving biology, here's the answer.

This issue affects ALL branches of science, *including* physics and cosmology

1:35-1:40

1:40-1:45

JUDGE JOHN E. JONES, III: "Both defendants and many of the leading proponents of intelligent design make a bedrock assumption which is utterly false. Their presupposition is that evolutionary theory is antithetical to a belief in the existence of a supreme being and to religion in general.

To be sure, Darwin's theory of evolution is imperfect. However, the fact that a scientific theory cannot yet render an explanation on every point should not be used as a pretext to thrust an untestable alternative hypothesis, grounded in religion, into the science classroom or to misrepresent well-established scientific propositions. The citizens of the Dover area were poorly served by the members of the Board who voted for the intelligent design policy."