

## Appendix B: Questionnaire

### True/False Versions of the Questions

**[DON'T KNOW ENCOURAGED]** Next, you will see a few short questions like those you might see on a television game show. For each statement, please select true or false. If you don't know or aren't sure, select don't know and go to the next question.

**[DON'T KNOW ACCEPTED]** Next, you will see a few short questions like those you might see on a television game show. For each statement, please select true or false. If you don't know or aren't sure, just skip to the next question.

**[DON'T KNOW DISCOURAGED]** Next, you will see a few short questions like those you might see on a television game show. For each statement, please select true or false. If you don't know or aren't sure, just take your best guess.

**A1. The center of the Earth is much hotter than the surface of the Earth.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A2. All radioactivity is man-made.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A3. It is the father's genes that decide whether the baby is a boy or a girl.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A3\_Alternative. It is a chromosome from the father's genes that decides whether the baby is a boy or a girl.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A4. Lasers work by focusing sound waves.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A5. Electrons are smaller than atoms.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A6. Antibiotics kill both viruses and bacteria.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A7. The universe began with a huge explosion.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A7\_ALTERNATIVE 1: The universe has been expanding ever since it began.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A7\_ALTERNATIVE 2: The galaxies in the universe have been moving away from each other ever since the universe began.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A8. The continents on Earth have been slowly moving for millions of years.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A9. Human beings, as we know them today, descended from earlier species of animals.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A9\_ALTERNATIVE 1. Human beings, as we know them today, descended from earlier species.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A9\_ALTERNATIVE 2. Elephants, as we know them today, descended from earlier species of animals.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**A10. The Earth goes around the Sun.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

[ASK IF A10 = TRUE] **A11. It takes one month for the Earth to go around the Sun.**

True

False

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

## Forced Choice Versions of the Questions

**[DON'T KNOW ENCOURAGED]** Next, you will see a few short questions like those you might see on a television game show. For each question, please select the answer that comes closer to your point of view. If you don't know or aren't sure, select don't know and go to the next question.

**[DON'T KNOW ACCEPTED]** Next, you will see a few short questions like those you might see on a television game show. For each question, please select the answer that comes closer to your point of view. If you don't know or aren't sure, just skip to the next question.

**[DON'T KNOW DISCOURAGED]** Next, you will see a few short questions like those you might see on a television game show. For each question, please select the answer that comes closer to your point of view. If you don't know or aren't sure, just take your best guess.

**AA1. Which is hotter – the center of the Earth or the surface of the Earth?**

Center of the Earth

Surface of the Earth

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA2. Is all radioactivity man-made or does some occur naturally? {ROTATE ORDER OF RESPONSE OPTIONS IN EXPERIMENT}**

All man-made

Some natural

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA3. What decides whether a baby is a boy or a girl? Is it the father's genes, the mother genes, or both? {ROTATE ORDER OF RESPONSE OPTIONS IN EXPERIMENT}**

The father's genes

The mother's genes

Both the mother and the father's genes

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA3\_Alternative. What decides whether a baby is a boy or a girl? Is it a chromosome from the father's genes, from the mother genes, or both? {ROTATE ORDER OF RESPONSE OPTIONS IN EXPERIMENT}**

Chromosome from the father's genes

Chromosome from the mother's genes

Chromosome from both the mother and the father's genes

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA4. Do lasers work by focusing sound waves or light waves? {ROTATE ORDER OF RESPONSE OPTIONS IN EXPERIMENT}**

Sound waves

Light waves

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA4 ALTERNATIVE. Do lasers work by focusing sound waves or do they work in some other way?**

Sound waves

Some other way

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA5. Are electrons smaller, larger, or the same size as atoms?**

Smaller

Larger

The same size

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA6. Do antibiotics kill bacteria, viruses, or both? {ROTATE ORDER OF RESPONSE OPTIONS IN EXPERIMENT}**

Bacteria only

Viruses only

Both

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA7. Did the universe begin with a huge explosion or did it begin some other way?**

With a huge explosion

Some other way

[Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA7\_Alternative 1. Has the universe been expanding, shrinking, or has it stayed about the same ever since it began?**

Expanding

Shrinking

Stayed the same

[Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA7\_Alternative 2. Have the galaxies in the universe been moving away from each other, moving closer to each other, or have they stayed in about the same place ever since the universe began?**

Galaxies have been moving away from each other

Galaxies have been getting closer to each other

[Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA8. Have the continents on Earth been slowly moving for millions of years or have they always been where they are now? {ROTATE ORDER OF RESPONSE OPTIONS IN EXPERIMENT}**

Have been slowly moving

Have always been where they are now

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA9. Did human beings, as we know them today, descend from earlier species of animals or did humans not descend from earlier species of animals?**

Humans descended from earlier species of animals

Humans did not descend from earlier species of animals

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA9\_ALTERNATIVE 1. Did human beings, as we know them today, descend from earlier species or did humans not descend from earlier species?**

Humans descended from earlier species

Humans did not descend from earlier species

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA9\_ALTERNATIVE 2. Did elephants, as we know them today, descend from earlier species of animals or did elephants not descend from earlier species of animals?**

Elephants descended from earlier species of animals

There has been elephants as long as there have been animals

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**AA10. Does the Earth go around the Sun, or does the Sun go around the Earth? {ROTATE ORDER OF RESPONSE OPTIONS IN EXPERIMENT}**

Earth goes around the Sun

Sun goes around the Earth

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**[ASK IF AA10 = EARTH GOES AROUND THE SUN] AA11. How long does it take for the Earth to go around the Sun: one day, one month, or one year?**

One day

One month

One year

Don't know [FOR DON'T KNOW ENCOURAGED CONDITION ONLY]

[FOR DON'T KNOW DISCOURAGED: IF NO ANSWER IS ENTERED AND RESPONDENT TRIES TO ADVANCE, ASK: "Please take your best guess"]

**B1\_INTRO1. The next questions are about what biologists believe. Please indicate whether each of the following is True or False according to what biologists believe.**

**B1\_INTRO2. The next questions are about the theory of evolution. Please indicate whether each of the following is True or False according to the theory of evolution.**

{ROTATE ORDER OF A-I} {CONTINUE DK EXPERIMENT}

**True/False Format**

	True	False
A. According to [biologists, the theory of evolution], all members within a species are equally able to find food and reproduce.	<input type="checkbox"/>	<input type="checkbox"/>
B. According to [biologists, the theory of evolution], even species that look different have many of the same genes.	<input type="checkbox"/>	<input type="checkbox"/>
C. According to [biologists, the theory of evolution], bacteria can inherit genes that make them resistant to drugs.	<input type="checkbox"/>	<input type="checkbox"/>
D. According to [biologists, the theory of evolution], all plants and animals, including humans, came from a single life form that lived a long time ago.	<input type="checkbox"/>	<input type="checkbox"/>
E. According to [biologists, the theory of evolution], traits that an animal develops during its lifetime will be passed on to its offspring.	<input type="checkbox"/>	<input type="checkbox"/>
F. According to [biologists, the theory of evolution], all dogs and cats came from a single life form that lived a long time ago.	<input type="checkbox"/>	<input type="checkbox"/>
G. According to [biologists, the theory of evolution], a plant can develop a new trait during its lifetime, like resistance to a pest.	<input type="checkbox"/>	<input type="checkbox"/>
H. According to [biologists, the theory of evolution], lizards with traits that help them avoid predators are more likely to survive and reproduce than other lizards.	<input type="checkbox"/>	<input type="checkbox"/>
I. According to [biologists, the theory of evolution], a population of birds that lives in two different places may slowly adapt to those places and over many generations become two different species.	<input type="checkbox"/>	<input type="checkbox"/>

**Forced choice format**

**A. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. All members within a species are equally able to find food and reproduce.
2. Some individual members of the same species are better able to find food and reproduce than others.

**B. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. Species that look different share many of the same genes with each other.
2. Species that look different share few or no genes with each other.

**C. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. Bacteria can inherit genes that make them resistant to drugs.
2. Bacteria cannot inherit genes that make them resistant to drugs.



**D. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. All plants and animals, including humans, came from the same life form that lived a long time ago.
2. There is no single life form that plants, animals and humans all came from.

**Biologists often think about traits that a life form develops during its lifetime (such as big muscles) versus traits an animal inherits from its ancestors (such as blue eyes).**

**E. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. Animals pass along traits that they develop during their lifetime to their offspring.
2. Animals pass along traits that they inherit to their offspring.

**F. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. All dogs and cats came from a single life form that lived a long time ago.
2. There is no single life form that dogs and cats evolved from.

**G. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. A plant can develop a trait, like resistance to a pest, during its lifetime.
2. A plant cannot develop a trait like resistance to a pest, but can inherit this trait.

**H. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. Lizards with traits that help them avoid predators are more likely to survive and reproduce than other lizards.
2. All lizards are equally likely to survive and reproduce.

**I. Which statement best describes what [biologists believe/the theory of evolution says]?**

1. A population of birds that lives in two different places may slowly adapt to those places and over many generations become two different species.
2. A population of birds that lives in two different places may slowly adapt to those places, but they will always be the same species.

**Section C Introduction.** Now we would like to ask you a few questions about your view about the theory of evolution.

**C1. Do you, personally, accept the theory of evolution, reject the theory of evolution or do you not have an opinion?**

1. Accept – GO TO C3
2. Reject
3. Do not have an opinion – GO TO C3

**C2. How important are each of the following factors in shaping your beliefs about the theory of evolution?**

	Very Important	Somewhat important	Not too important	Not at all important
Quality of the scientific evidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conflict or consistency with your religious beliefs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your education or what you learned in school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your family's beliefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**C3. Please type in your own words why you [accept/reject] the theory of evolution?**

---

**C4. Which of the following statements comes closest to your views on the origin and development of life?**

1. God created all life but has not guided the process of evolution.
2. God created all life and continues to guide the process of evolution.
3. God created all life and all species as they are today.
4. God had no role in the process of evolution.

**C5. Which statement comes closer to your own view?**

1. The universe is probably about 10,000 years old.
2. The universe is probably billions of years old.

**C6. Which statement comes closer to your own view?**

1. Life as we know it most likely developed through random natural processes.
2. Life as we know it most likely developed through the guidance of an intelligent power.

**C7. How informed would you say you are about the theory of evolution?**

1. Very informed
2. Somewhat informed
3. Not too informed
4. Not informed at all

**C8. What is the highest level of education that you have completed?**

1. None, or grade 1-8
2. High school incomplete (grades 9-11)
3. High school graduate (grade 12)
4. GED
5. Business, technical, or vocational school other than high school
6. Some college, no 4-year degree
7. College graduate, (B.S., B.A., other 4-yr. Degree)
8. Master's degree, Ph.D.; law medical or other professional degree

**CONTINUE IF R HAS HIGH SCHOOL DIPLOMA OR ABOVE EDUCATION, OTHERWISE SKIP TO CLOSING**

**C9. Have you ever taken any college-level science courses?**

1. Yes
2. No

**C9a. (IF YES TO C9) How many college-level science courses have you taken?**

\_\_\_\_\_ Number of courses

**C10. Now think about the courses you took in high school. What was the highest level of math you completed in high school?**

1. No math in high school
2. General math, business, or vocational math
3. Pre-algebra
4. One year of algebra
5. Two years of algebra
6. Geometry (plane or solid or both)
7. Trigonometry/Linear Programming/Analysis
8. Pre-Calculus
9. Calculus

10. Statistics

11. Other (Specify \_\_\_\_\_)

**C11. Did you take a high school biology course?**

1. Yes
2. No

**C12. Did you take a high school chemistry course?**

1. Yes
2. No

**C13. Did you take a high school physics course?**

1. Yes
2. No

**Closing: Thank you for taking the time to complete this survey.**