Ways of Knowing – Data and Belief: Theological and Scientific Methods

SESSION SIX LEADER GUIDE

This leader guide is designed to follow each page of the sixth session: **"WAYS OF KNOWING – DATA AND BELIEF: THEOLOGICAL AND SCIENTIFIC METHODS "** with background for the leader and helpful references for expanding the learning. This sixth lesson may be taught as one longer continuous session, such as at a retreat setting, or as separate sessions (approximately one hour) that cover each page of the session. You may wish to have youth view the website, or individual pages, on their own, then gather as a group to discuss and explore the learning. The website is also useful within the classroom as a teaching tool to introduce the material, then youth may revisit it later to reinforce learning at home.

While the curriculum offers prompts for guiding conversation and offers direction for teaching the material, it is important to prepare your own answers for questions and notes for discussion. Sharing your personal experience and insight with the group is a valuable resource for these lessons.

OBJECTIVES

At the end of this session, the students will be better able to:

- Define the scientific and religious ways of knowing about the world
- Incorporate both a scientific and religious perspective into knowing about the world

THE LEARNING ENVIRONMENT

The conversation between faith/religion and science can be difficult to navigate with youth who live in a world where they are bombarded by a great amount of information and opinions. It is important to first set a safe learning environment where differing opinions are respected and confidentiality is secured.

You may also want to consult with parents/guardians prior to beginning this session to alert them to the concepts taught in this session, and invite them to preview the website. Many adults are unfamiliar with ways to talk about both science and religion, or may have beliefs that are challenged by this learning.

Within any group of youth you will find a wide range of maturity and development levels. In general, adolescent-aged students (12-14) are able to engage in more complex thinking, reason deductively, and are better able to form concepts about the past, present, and future than their elementary counterparts. As adolescence is achieved, they can synthesize values and beliefs with their own experiences to create meaning and understanding for life. This is also a time when a sense of personal identity is being formed, and this extends to their identity as it relates to the concepts of science and faith.

SUPPLIES FOR SESSION ONE

- Computer and access to Internet

TO BEGIN:

Gather youth and provide an overview of lesson(s) to be covered in **WAYS OF KNOWING – DATA AND BELIEF: THEOLOGICAL AND SCIENTIFIC METHODS** session(s). If this lesson is held separately from the previous lesson, review the need for a safe and confidential environment (See Lesson 1 – Leader Guide). Ask youth to recall ways for their group to honor one another's opinions and to keep shared ideas in the group. If possible, review these ideas previously listed on a white board, or a computer document, and read the completed list. Ask all present, youth and adults, to agree to follow these guidelines for the duration of the learning time together.

PAGE ONE – WAYS OF KNOWING – DATA AND BELIEF: THEOLOGICAL AND SCIENTIFIC METHODS

Begin the session by discussing how students experience the world and how we generally know about the world. Compare and contrast knowing facts from having experiences that support our beliefs. Ask the group to recall a time when they learned something new or had an experience that supported their faith or belief in God. Ensure that other group members allow each member to share personal views without judgment. Encourage the group to explore ideas rather than simply placing judgment onto another person.

Ask the following two questions:

What are the differences in these two ways of knowing?

How are these related to the scientific and religious ways of knowing?

Allow all answers.

Review with the class the website information on the area of PAGE ONE prior to the link.

Next: Have the group watch the video clip in the link: "Sesame Street: One of These Things." *Allow discussion about the learning process following the video as time allows.*

Review with the class the remaining information on the area of PAGE ONE after the link.

Next, discuss with the group their ideas of why a person might develop faith, as suggested by author Barrett. Continue the discussion by asking the group to share any experiences they might have had as a child when they began to have either a religious and/or scientific view of the world.

Be attentive to the need for each group member to honor the thoughts, feelings, and opinions of each other. Allow the discussion to continue for as long as interest is maintained. You may continue on with the lesson to PAGE TWO – THE TWO METHODS, or bring the session to a close.

If the session will end, encourage students to keep track of any conversations they observe or have experienced with friends or family regarding the differences between scientific and religious ways of knowing about the world. Encourage students to bring this information back to future sessions.

PAGE TWO – THE TWO METHODS

Note: If you are starting with a new session, remind the group of the agreement to honor one another's opinions and to keep shared ideas in the group. Check in with group members to relate any conversations that they might have observed or experienced with others regarding the different ways of knowing or learning about the world.

To begin, review the information on PAGE TWO under the heading: THE SCIENTIFIC METHOD. Ask the group to recall and discuss any scientific experiments they may have conducted along with the steps taken to prove a hypothesis. Discuss scientific discoveries that have helped in understanding ways that the world works such as, space travel, seismic activity, or global warming. Remind students that with regard to the scientific method, when new data is gathered, it sometimes is used to disprove previous scientific understandings. Scientific discovery, or revelation, is not static.

Share with the group an additional important discovery by scientists Watson and Crick who discovered DNA. Have the group go to http://gizmodo.com/5987534/watson-and-crick-discovered-dna-60-years-ago-today to read about the discovery of DNA, which is the basic building block of all life.

Discuss with the group how this discovery has helped science and medicine to develop treatments and cures for genetic-related illnesses or disease.

Next: Review the information under the heading THE THEOLOGICAL METHOD. Discuss the idea of revelation and what that might mean for each member of the group. *Allow all answers. Help students understand that revelation is not the act of humans choosing to access God, but God being made known in some new way.*

Review the six key points of revelation and discuss any ideas the group might have for how God or God's will is revealed today. This concept can be difficult to understand and it's important to stress that understanding a revelation of God needs to be done with a supportive community to discern the ways in which God might be active in our lives. Below are helpful prompts for students to understand the six points of revelation:

1) Revelation refers to God revealing God's self

God reveals God's self in the person of Jesus Christ

2) Revelation points to particular events and particular people God uses to reveal what God wants

In the Bible prophets are known as particular people to reveal God's will

3) Revelation of God is also ironically a hiding of God (God is shown but at the same time hidden.)

We can never fully know who God is, even when God is revealed to us

4) Revelation of God calls us to make a personal response to it and accept it

A person who has a sense that God has been revealed in some way is called to discern what it might mean for their life and take this revelation to heart

5) Revelation of God always surprises us and is unsettling

A revelation from God can come as a shock and upset our plans for life

6) Revelation becomes a new way for understanding and interpreting God, the world, and ourselves

A revelation can change our previous way of thinking about how God is present in our life

Other examples might include the selection of a Pope (as a way God reveals a new leader), or decisions made by a church to engage in social justice issues.

Next, review the information on PAGE TWO regarding Muslim, Jewish, and Buddhist views of revelation. Discuss how Muslim, Jewish, and Christian faiths each use a source of scripture as a way to reveal God's will. Read the information in the links for Muslim and Jewish understandings of revelation.

Note that Rabbi Gershon states: "Every religion relies on revelation as a source of truth." However, this is not the case for Buddhism, and it appears that Rabbi Gershon is referring to the three Abrahamic faiths (Judaism, Islam, and Christianity.) Be sure to note this to the group.

Have the group explore the Buddhist website. *Allow students to look at the various aspects of Buddhism and encourage them to compare these to the different aspects of Christian, Jewish, and Muslim faiths.*

Help students think about how God might be revealed in the world and ask them to consider which of the methods, scientific or theological, may or may

not help them understand the world. Promote respectful listening as each group member offers his or her personal view.

Next: Ask the group to think about the similarities and differences between the scientific and religious methods of understanding the world. Discuss the reasons for why others might disagree about these two methods.

Ask: How can we know if our understanding of the world is from a source of scientific knowledge or from a revelation by God? *Allow all answers. Encourage the group to understand how each person's viewpoint might reflect the understandings discussed above.*

To close this portion of the lesson, ask the group if they can tell one way that they might talk to others about the scientific and theological understandings of learning about the world. Encourage members to make a list of "I Believe" and/or "I Know" statements that include both understandings.

If the session will end, encourage students to ask family and friends about how they view the scientific and religious methods of understanding the world and to bring those ideas back to future sessions.

PAGE THREE – WHAT'S THE BIG DEAL?

Note: If you are starting with a new session, remind the group of the agreement to honor one another's opinions and to keep shared ideas in the group. Check in with group members regarding any conversations they might have had with family or friends regarding their understanding of scientific and theological ways of knowing about the world.

Prior to gathering the group to review this third page, preview the slide show at the top of the page and become familiar with the following information:

The slideshow displayed at the top of this page contains a number of images that represent the subject of ways of knowing about the world. These are images that are among the many available in the media and on the Internet and are only a small representation of what youth might encounter. The group will view these images during this portion of the lesson. From the start of the slide show they appear as follows:

A statement: We All Have Questions,

A picture with the statement: Without emotions…we would barely know which life choices to make, because choices are based on preferences, and preferences are ultimately emotional,

A scientist with a scientific instrument,

A picture with the statement: Grow in the wisdom and knowledge of God,

A picture with the statement: Demand evidence and think critically,

A picture with two books: One is a math text for calculus and one is a book that addresses the connections between religion and science.

To begin this portion of the lesson, have page three visible to the group and ask:

How do you respond to an announcement, either in the news or on the Internet, that someone has had a revelation from God? *As group members*

discuss this question, be sure to note that this might include a revelation about a worldwide event or a revelation about a personal event.

How do you know if the revelation might be true or false without knowing the final result of the predicted outcome?

Next, have the group read the story located on the link of PAGE THREE.

Discuss with the group the event reported in the article and recall any other publicized revelations they might know of from the media. Ask the group to consider types of revelation that might be of benefit to others, such as a person choosing to give service or help to homeless people based upon a divine revelation.

Ask: Have there been times when a person or group claimed the God was revealed in an event where it was validated in some way? *An example of this might be a person claiming to have prayed or meditated seeking God's will, or revelation, to accept a challenge and then a successful outcome validated the revelation.*

Next, read through the remaining portion of PAGE THREE and click on the link from the PBS dialogue.

Ask the group to respond to the statement by psychiatrist Freud: *"The scientific method," Freud writes, "is our only source of knowledge." The Ten Commandments, according to Freud, come from human experience, not from revelation.*

Next, read the dialogue between physician Frederick Lee and author on spirituality Winifred Gallagher:

Frederick Lee*: But I'm troubled by the idea that one can be willing to believe in something if it's not true.*

Winifred Gallagher*: But just because it's not scientific doesn't mean it's not true. If reality is sitting in the middle of the table and there's a wall around the table, then we all are looking through a different window. To me, science is just one of those windows. I can go over there and see the art window, I can see the religion window, I can see the music window of reality. I don't understand why science in our age by some people is regarded as sort of the*

be all and end all of reality.

Ask the group to consider how both the use of the scientific method (testing hypotheses) and the experience of individuals might be equally valid for knowing about and understanding the world. *Continue the conversation as long as there is interest.*

Note: Some of the conversation in this dialogue suggests that there is a problem with the religious claims of knowing the truth by different organized religions. Be sure to emphasize to the group that this is an issue between differing religions, and not between religion and science. Science is neither theistic, nor atheistic or tasked with proving or disproving the claims of religion.

Next, have the group look at the slideshow at the top of the page, and ask that everyone wait until all pictures are viewed before making comments. Invite the group to respond to the images and allow time for each member to add to the conversation.

Using the information provided at the beginning of this session, talk about each of the images. (Remind the group to be respectful of each other's response.) The white dots that appear at the lower right of the slideshow can be used to select and navigate through the ten images.

Ask the group to share what each image might mean to them, or how the image might cause them to respond to the scientific and theological methods of knowing about and understanding the world.

Use the following as prompts for discussion:

The statement, "We All Have Questions," reminds us that as humans we are all curious about the world. Should people always consider both the scientific and theological methods of answering questions about the world? Why or why not?

A picture with the statement, "Without emotions…we would barely know which life choices to make, because choices are based on preferences, and preferences are ultimately emotional," might suggest that we make decisions

based upon only emotions. How do our emotions affect our perception of data, facts, or religious experiences?

A scientist with a scientific instrument could be an image that shows how valuable scientific methods are to society. How do you see that society values the understandings and knowledge of religion?

The next two slides are in contrast with one another as they state: “Grow in the wisdom and knowledge of God,” and “Demand evidence and think critically.” How does each statement lead us to seek important understandings and knowledge of the world?

The two books, a math text for calculus and a book that addresses the connections between religion and science, are together in one photo. What are ways that you see both methods of religion and science working together?

Next, ask the group to define intolerance. *Allow all answers. One definition is the refusal to accept views different from ones own.*

Ask: What are some of the dangers of intolerance?

Discuss the issue of intolerance and how it can create conflicts, which sometimes escalate to violence. Ask: What are ways to promote tolerance? *Allow all answers. Encourage group members to think about the use of listening skills and conversation as a way to understand another’s viewpoint. Help the group to understand that being tolerant of another viewpoint does not require that you give up your own beliefs.*

Discuss with the group their experiences in talking to others about how the methods of science and religion might or might not work together. What is most difficult, or easiest to talk about?

To close the session, talk about what these images might promote that is challenging or helpful to the conversation about scientific and religious methods of learning about and understanding the world. Ask that they spend time at home looking at the website and researching other information about ideas covered in the lesson. Ask each member to bring a copy of any images that represent their understanding of the material.

PAGE FOUR – CHOOSING OPTIONS

Note: If you are starting with a new session, remind the group of the agreement to honor one another's opinions and to keep shared ideas in the group. Check in with group members regarding any research they might have completed that tells about the ideas covered in the previous lesson. Ask the group to share any resources or images that they might have brought to this session.

This final page of **WAYS OF KNOWING – DATA AND BELIEF: THEOLOGICAL AND SCIENTIFIC METHODS** is designed to help youth focus on both the scientific and religious methods of learning about and understanding the world.

To begin the session, open the website and review the first three pages of **WAYS OF KNOWING – DATA AND BELIEF: THEOLOGICAL AND SCIENTIFIC METHODS**

Ask the group members to share one significant thing they may have learned or discovered about the scientific and religious views of how we learn about and gain knowledge of the world. Discuss how they might have engaged other youth or family members in this learning and any conversations that might have occurred, either in person or in a social media setting.

Next, read the following opinions to the group about knowledge and belief from the website:
http://askville.amazon.com/difference-belief-knowledge/AnswerViewer.do?requestId=2572218.

If desired, look over the site for additional examples of opinions for this conversation, taking care to evaluate responses for inappropriate or judgmental language before sharing the information with the group. It might be helpful to print the responses listed below to facilitate conversation among group members.

1) Ultimately, everything that we "know" is a matter of perception. We could be just brains-in-vats, and everything we "know" is just an illusion.

So there's no clear line between knowledge and belief, but in general the line is a difference in repeatability. I "know" that my cell phone is in my pocket because I can go check it. Every time I repeat the experiment, my cell phone is there.

And I "know" that there is a city called Toronto in Canada, because I can go check it. I don't actually have to go there and prove it, because I know that I could. Other people report that they've done the experiment, and that'll be good enough for now. So I call it "knowledge", and I'll revise what I know if I start hearing reports that Toronto is actually a kind of citrus fruit.

The ironic point is that the experiment could fail. The possibility of failure is critical. If I could have said, "Well, I put my hand in my pocket and my cell phone isn't there, but I'll say that it is anyway," then my experiment wouldn't really prove much. We'd just say, "My cell phone is there, whether it really is or not", and that's not terribly useful.

By contrast, "belief" is for stuff, which we can't demonstrate. I believe that we will some day cure cancer, even though I can't do an experiment to show it. I could wait a hundred years, but if it hadn't been found, it might just need another hundred years.

So that's the difference: knowledge is belief you can test. And by "test", I mean the possibility of proving that it isn't true. If you believe it and no evidence could convince you otherwise, then the belief isn't particularly useful. You might well act on it, but you cannot be sure that it's true.

There are some beliefs that people choose to believe that absolutely cannot be refuted. We can call these "faith". (We also have "faith" that the sun will rise tomorrow, but that's a less interesting sense of the word.) There is no inherent problem with faith; since it can't be tested it can't be proven wrong. Many people find that it helps them get through their day.

The only problem comes when my immovable faith meets your unstoppable belief. Then people get hurt. But until then we all get along pretty well despite (and, often, because of) our faiths.
PamPerdue

2) Belief tends to be related to faith, while knowledge has a more scientific basis.

A person can believe that the world is flat. It can be proven that the world is not flat, but the person can still believe it is. A person can know that the world is not flat, because it has been mathematically proven to him, but still choose to believe that the world is flat.

Belief has a more personal tone to it. We each have our own beliefs. Knowledge has a more generalness. Everybody "knows" that the world is round. Some choose not to believe it.

Belief also has a personal judgment to it. A person can believe in ghosts or UFOs. Their beliefs cannot be tested, and so people who have not had personal sightings of either cannot "know" that they exist. I believe UFOs exist, but I don't know if they exist, because I have never seen one. I could be wrong. I have never traveled around the world, but know it is round because of my studies in science and history. I don't think I could be wrong about that.

I hope this helps
Manimal

Discuss with the group the first opinion and ask for their response to the statement that knowledge and belief are a matter of perception. If desired, refer to **LESSON 4: PRAYER AND FAITH – MIND, BODY, SPIRIT: ARE THEY CONNECTED** and click on the tab entitled: **MORE THAN ONE ANGLE** for more information on perception and illusion. Allow conversation for as long as time allows. Continue the discussion by reading the second opinion. Encourage the group to think about the differences between how knowledge and belief are understood by others. Ask each member to offer their opinion of how these two differences might be defined.

Next, look at page four, **CHOOSING OPTIONS**, and review the information listed on the page. Discuss with the group the different ways that our brain receives information and how this might or might not affect our thoughts and feelings about the world.

Reinforce the concept that even though others might disagree with our beliefs or ways of interpreting knowledge about the world, they are using the same tool of the human brain to choose their way of understanding the world. It is important to consider more than one option when learning about and making sense of the world and to refrain from taking a rigid perspective that limits input from other sources. Help the group understand that this learning is a basic way of looking at this issue, and that just like science and religion, their ideas will change and become more complex.

Next, ask the group to consider how they might respond to others about the learning in this lesson. Encourage the group to consider ways to respond from both a scientific and religious viewpoint. Ask the group to reflect on how their understanding of this issue may or may not have changed.

For additional learning, ask a member of the congregation or other source who has a career in scientific research as well as a religious leader to come and share how they integrate their faith and scientific beliefs.