

The Land Down Under

Sigma Investigation

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Supplies Needed:

- *David Bussau: Facing the World Head-on* by Janet and Geoff Benge
- Amazon Prime Video: *Wildest Places*: Season 1, Ep. 4 “Wild Coasts”
- *The Land Down Under: Sigma Investigation Co-op and Mentor Guide*
- *internet access*
- If completing this Investigation without a co-op, purchase the lab supplies listed in *The Land Down Under: Sigma Investigation Co-op and Mentor Guide*.

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The River Nile, Van Diemen's Land, from Mr Glover's Farm, by John Glover (1767–1849)





• Investigation Preparation •

Given to Every Man

Note: If you are participating in a Co-op Study of this Investigation, read this article, “Given to Every Man” prior to your first class.

It is estimated that roughly 109 billion people have lived on Earth up to this point. That is an incredible amount of people, an enormous number of families, and a great number of nations of people. Among all of those people are so very many differences—different traditions, religions, cultures, and languages.

We know that despite all of these many, many differences that there is much

that we have in common. We are each children of our Heavenly Father, we have each been blessed to come to Earth with bodies that were created in the image of God. We all came to Earth as infants with needs, personalities, emotions, and desires. But is that where the extent of the similarities of all of God’s children ends?

There is another blessing less thought of and remembered that unites each individual on Earth both of the past and present—a gift that has been given to every man, woman, and child.

Joseph F. Smith and his counselors of

Given to Every Man

the First Presidency taught, “There is a universally diffused essence which is the light and the life of the world, ‘which lighteth every man that cometh into the world,’ which proceedeth forth from the presence of God throughout the immensity of space, the light and power of which God bestows in different degrees to ‘them that ask him,’ according to their faith and obedience.”¹

More recently Elder D. Todd Christofferson in his October 2020 talk titled “Sustainable Societies” said, “Whether aware of it or not, every man, woman, and child of every belief, place, and time is imbued with the Light of Christ and therefore possesses the sense of right and wrong we often call conscience.”²

The Light of Christ is a gift given to all of God’s children on Earth. As you read the following scriptures, **underline or highlight specific ways the Light of Christ can be a blessing to each one of us.**

In Moroni 7:16 and 19 we learn, “For behold, the Spirit of Christ is given to every man, that he may know good from evil; wherefore, I show unto you the way to judge; for every thing which inviteth to do good, and to persuade to believe in Christ, is sent forth by the power and gift of Christ; wherefore ye may know with a perfect knowledge it is of God.

Wherefore, I beseech of you, brethren, that ye should search diligently in the light of Christ that ye may know good from evil; and if ye will lay hold upon every good thing, and condemn it not, ye certainly will be a child of Christ.”

In D&C 88: 11–13 we read, “And the light which shineth, which giveth you light, is through him who enlighteneth your eyes, which is the same light that quickeneth your understandings;

Which light proceedeth forth from the presence of God to fill the immensity of space—

The light which is in all things, which giveth life to all things, which is the law by which all things are governed, even the power of God who sitteth upon his throne, who is in the bosom of eternity, who is in the midst of all things.”

As we study and learn of people both past and present, people with differing beliefs and differing ways of life, let us remember that though they may not, as of yet, know of or have embraced the fullness of the gospel of Jesus Christ, the Light of Christ touches and enlightens all people as much as they choose to embrace it. They may not even understand what it is, where this moral compass comes from, but we can look for and see the goodness in others.

On June 22, 2004, at a seminar for new mission presidents, at the Missionary

Given to Every Man

Training Center in Provo, Utah, President Boyd K. Packer taught, “The more we know about the Light of Christ, the more we will understand about life and the more we will have a deep love for all mankind. We will be better teachers and missionaries and parents, and better men and women and children. We will have deeper regard for our brothers and sisters in the Church and for those who do not believe and have not yet had conferred upon them the gift of the Holy Ghost.”

As you begin this Investigation into the lives of the Aboriginal Australians remember that though their way of living and beliefs may be very different from your own, that each is a child of God and each deserves our respect and kindness. Each possesses the Light of Christ, each holds or has goodness within them, and it is in and through this Light of Christ that we can learn and grow together in love.

¹ “‘Receiving’ the Holy Ghost,” Improvement Era, Mar. 1916, 460.

² “Sustainable Societies,” By Elder D. Todd Christofferson, Oct. 2022 General Conference, <https://www.churchofjesuschrist.org/study/general-conference/2020/10/22christofferson?lang=eng>





Brush scene, Brisbane Water by Conrad Martens (1801-1878)

Aboriginal Australia

Introduction

As you read the following information about Aboriginal Australia, make note of customs and traditions that are similar to your own and those that are different from yours. What factors do you think might have led to the differences between your culture and traditions and those of Aboriginal Australians?

The wonderful country of Australia holds a sort of isolated position on the earth. It is situated just below the equator, and extends about forty degrees southward. This large expanse provides the northern extremity a tropical heat and at its southern point a climate that brings the four seasons, including freezing temperatures in the winter. But there is perhaps no country where the temperature is so likely to change as Australia. One instance was recorded where the thermometer registered a change of fifty degrees in twenty-five minutes. This sudden change is owing to the winds, which if they blow from the sea are cool, but if they blow toward the coast, after passing over the heated sand-wastes of the interior, raise the

temperature in such an extraordinary manner. Still the climate, changeable though it be, is a pleasant one. Both the animal and plant life of Australia are strangely unlike those of other lands.

It is no wonder that with all of the diversity of weather, land, animals, and plants that the Aboriginal tribes of Australia also are as diverse and unique one from another. They all possess similar characteristics, but they also hold very different traditions.

In this Investigation, we will begin with a general sketch of the Aboriginal Australians and look at some of those habits that are similar amongst them. We will also look briefly at some of the manners and customs which exist in several specific tribes. From there we will explore some more recent historical events in Australia, examples of both positive and negative impact. Along the way, we will discover and learn more about the wildlife of the area and will study, in particular, the science of the Great Barrier Reef, an incredible reef that makes its home just off the shores of Australia. So, come along and enjoy this amazing area of the world called Australia!

Aboriginal Australia

Wild Life

Definitions

Flora _____

Fauna _____

Marsupial _____

Edentate _____

Australia is a very unique country. The plant and animal life are remarkable, and are so unique that when earlier voyagers brought back accounts of their travels nobody believed them; when they exhibited specimens of the **flora** and **fauna**, they were accused of manufacturing them for the purpose of deception.

In the first place, with a single exception, the mammals of Australia are all **marsupials** or **edentates**. The exception is the dingo, a wild animal similar to a dog or jackal.

The young of a marsupial animal is born at a very early age and continues its full development in a pouch on the front



dingo¹

of the mother, where the young is also nursed by the mother.

The animal which is most characteristic of Australia is the kangaroo. There are several different types of kangaroos and even more similar animals, such as the wallaby and kangaroo rat. These animals vary in size from that of a tall man (red kangaroo) to that of a mouse



red-necked wallaby²



Seeing Science

Wildest Places: Season 1, Ep. 4 “Wild Coasts”
Amazon Prime Video (52:00)

Documentary

1. What are some of the characteristics and behaviors of soldier crabs and why are they called the cleaners of the sand flats?

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Australian soldier crab¹

2. What are stromatolites? How are they like coral?

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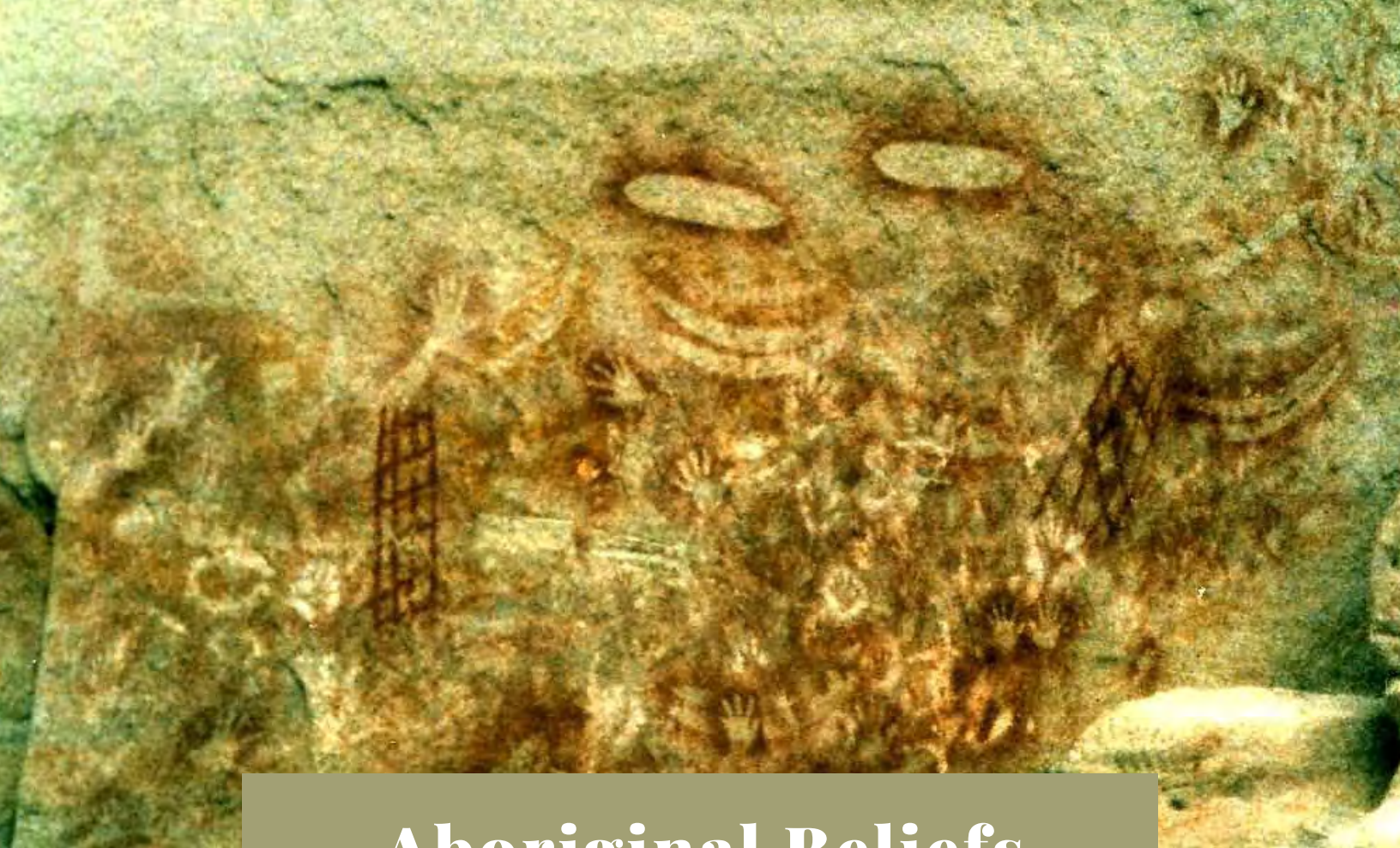
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stromatolites²

¹Image by user: LiquidGhoul edited by user: Brian0918 - Extracted from this Commons file, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=111251352>

²Image by Paul Harrison - Photograph taken by Paul Harrison (Reading, UK) using a Sony CyberShot DSC-H1 digital camera., CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=714512>



Aboriginal Beliefs

Above: Stencil art showing unique clan markings and dreamtime stories. The images symbolize attempts to catch the deceased's spirit.

The Aboriginal Australian people have a rich culture and a wealth of myths, most of them about the 'dreamtime.' The dreamtime, according to Aboriginal Australians, was the period before time itself, when people lived with gods and animals took on human form. Traditional Aboriginal beliefs include many gods and goddesses. Chief among them are Byamee, the All Father and Yhi, the Sun Goddess.

The following two articles explain a little more about some of the beliefs the Aboriginal people, held specifically about Byamee, the All Father, and Yhi, the Sun Goddess.

As you read, makes notes at the end of each article about the similarities and differences you see between your beliefs and the beliefs of the Aboriginal people.



Byamee, the All Father

The Euahlayi Tribe is an indigenous group of people of Australia from the area known as New South Wales. Throughout the laws, mysteries, and legends of the Euahlayi, there occur frequent mentions of Byamee.

When translated the word Byamee means 'God.' Byamee is derived from the verb Baia, or Biai, which means 'to make.' Literally, however, at least in Euahlayi, the word Byamee means 'great one.' As the name of the All Father, the Euahlayi custom is that the word is not supposed to be used by women or by the uninitiated. If it is necessary to speak to them of Byamee, he is called Boyjerh, which means 'Father.'

Byamee was a worshipful being, revealed in the mysteries, long before missionaries came.

It is believed that the Byamee, referred to by some as an 'All Father' (meaning 'Our Father'), dwells in or above the sky, and often receives the souls of Aboriginal Australians who have been 'good.' These ideas are not derived or developed out of ancestor worship, which does not exist in the tribes. The belief is concealed from women, but communicated to boys at their initiation. The women of the Euahlayi have some knowledge and means of mystic access to Byamee, though

Toilers of the Reef | Chapter 1

The Giant Shell

In a small tent, erected just above high-water mark on one of the remote beaches of the North Queensland coast, Will Thompson and Vernon Sinclair sat on two rough camp stools, at a table equally rough. The ocean, violently agitated by a recent storm, was thundering along the shore, while the wind, sighing through the dense mangrove forest at their back, was executing a high-pitched accompaniment.

Will Thompson's father was a pearler, and his two sturdy fishing luggers were now out on the fringe of the Great Barrier Reef, searching for the valuable mother-of-pearl shell from which many shirt buttons, penknife handles, and many other things were made. Vernon Sinclair, Will's cousin, was a Melbourne boy, who had come North to spend a three months' holiday with his uncle and aunt, in their home near Cape York.

Two days prior to the opening of this story, they had left Will's home in a small boat, with the intention of camping out for a week on Grand Shaggy Point. This was a noted spot for seashells, and, as Vernon wished to take a collection back with him to Melbourne, he was full of eagerness to finish breakfast, and search the weed-strewn beach for rare shells which may have been washed off the coral reefs during the storm.



Ten minutes later, the two boys were walking slowly along the beach. Every now and then, Will upturned a lump of weed or sponge with a long stick. Vernon had been searching for cowries amongst the rocks which fringed the water-line. Presently he called out excitedly, "Will, come here at once! I have found such a big shell. Why, it is almost as large as a small boat!"

Will threw away a large piece of dried sponge he had been examining, and hastened across to his cousin's side. At their feet lay a huge cockle-shaped shell, which measured about three feet six inches in length.

"It is a Giant Clam," said Will. "They inhabit the deeper waters between the mainland and the Barrier Reef. Here they lie on the surface of the reef, and are generally so thickly covered with corals, sponges, and

“Yes,” replied his cousin. “I don’t like the look of the sky. As soon as we have lunch, we will roll up the tent and sail back toward home. If heavy rain sets in, we may not be able to get away for several days, and it is just as well to move while the weather is fine. You will have many more opportunities to add to your collection of shells before you return to Melbourne.”

²Image by Bengt Nyman from Vaxholm, Sweden - Physalia physalis EM1B0679, CC BY 2.0, <https://commons.wikimedia.org/w/index.php?curid=67414037>

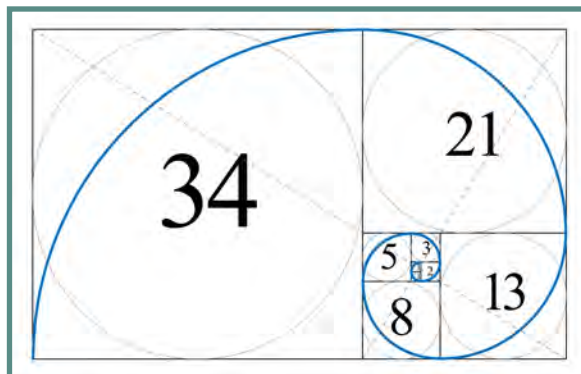
Toilers of the Reef

Chapter 2 Follow-Ups

1. Inside the nautilus shell are small compartments, each slightly larger than the previous one. This pattern of nature is an incredible example of the handiwork of God.

Watch the two **nautilus shell/Fibonacci sequence videos** found in the online interactive file of this Investigation. The videos will help you understand this pattern and how to identify it elsewhere in nature. After watching the videos, answer the questions below.

In what other ways do you see God’s handiwork in the world around you? Can you think of any other items that follow the Fibonacci sequence (golden ratio)?



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2. Each and every one of God’s creations serves a purpose in one way or another. The purpose of some creations is easier to identify when compared to others.

Watch the **sea cucumber video** found in the online interactive file of this Investigation. Then answer the following questions.

What purpose do you think sea cucumbers serve in supporting their ecosystem? What do you think would happen to their ecosystem if they were no longer there?

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In what other way(s) do you think sea cucumbers benefit the world?

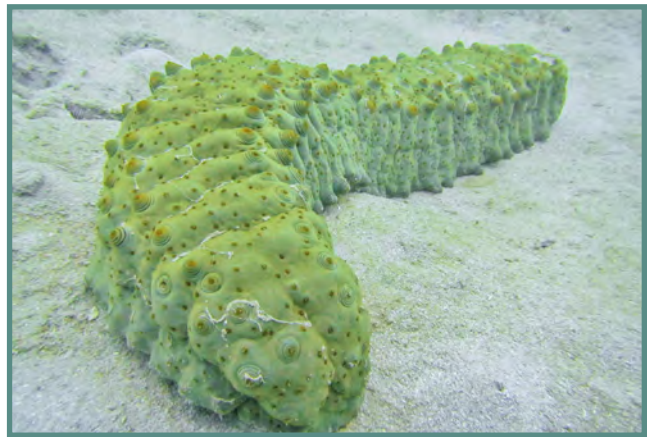
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Graeffei Sea Cucumber³



Curryfish Sea Cucumber⁴



Sweet Potato Sea Cucumbers⁵

³ Image by Vardhanjp—Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=109863969>

⁴ Image by Frédéric Ducarme—Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=56712268>

⁵ Image by Lili Hartounian - <https://www.inaturalist.org/observations/494547>, CC BY 4.0, <https://commons.wikimedia.org/w/index.php?curid=83246804>

The Last of His Tribe



Pondering Poetry

During the 1700–1800s, many Europeans arrived in and began to settle much of Australia. Due to disease the Europeans brought and the many massacres they committed, thousands of Aboriginals were killed. As you read the poem “The Last of His Tribe” (found on page 62) consider how the Aboriginal people must have felt losing so very many of their people.

Next, read through the poetry vocabulary listed on page 63, then reread the poem.

Grasping the words of a poem helps immensely in understanding the full meaning of the poem. Likewise we cannot fully understand others unless we have walked in their shoes. How might a greater willingness to understand have helped the relations between the Aboriginal people and the colonial settlers?

Read Mormon 8:1–5. In what ways do you think the feelings of Moroni might be similar to the feelings of the Aboriginal people who were the last of their tribes to live? Ponder how you might feel if you were the last of your civilization.

Poetry Vocabulary



Wallaroo

A wallaroo is an animal native to Australia. They are similar to a kangaroo but smaller in size.



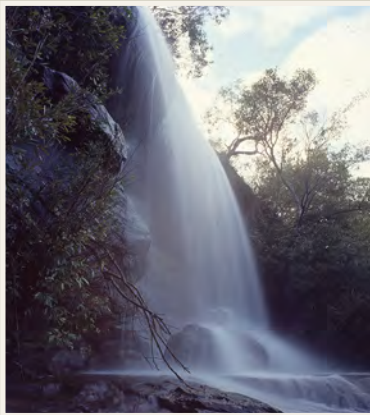
Covert

A covert is a covering or a shelter that can be either man-made, like a building, or found in nature, like a tree.



Boomerang

Boomerangs are wooden tools that are thrown and used in hunting by the Aboriginal people.



Uloola Falls

Uloola Falls is a waterfall located in Royal National Park, Australia.

Image by Sardaka - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=42512355>



Nullah

Nullah is another word for a ravine or gully.

Image by Jawadqada - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=49136761>



Corrobboree

A corrobboree is an Aboriginal Australian event with singing and dancing.



Natives on the Ouse River, Van Diemen's Land by John Glover (1767-1849)



Living Literature

David Bussau: Facing the World Head-on
by Janet & Geoff Benge

Chapter 10

The Bussaus went to Bali as “a step of faith.” They felt they would be led to know what they should do next if they took this step. Have you experienced your own step of faith? If so, what was it? If not, what can you do when you feel prompted by God to do something you are unsure of?

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The author describes Bali as a “deeply spiritual place” where Hinduism is the predominant religion. What is Hinduism? (Ask your parents for help if needed.) How does it differ from Christianity?

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Laboratory Video #3

Sea Anemone and Coral Dissections

As you watch the following videos, make note, in the space provided, of some of the things you learn.

Sea Anemone



sea anemone

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Coral



coral

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A Proud Mother by Frank Paton, 1855–1909

Personal Application

The Parable of the Grateful Cat

Listen to the audio recording of **“The Parable of the Grateful Cat”** found within the online interactive version of this Investigation.

After listening to the parable, identify the truth that is being taught through the symbolism of this parable.

Truth: _____

Then using the following two pages, write a response paper to this question:

- All humans experience emotions such as happiness, sadness, fear, gratitude, and more. However, we all have different ways of expressing these feelings. Could the recognition of feelings, that were manifested differently, have helped the Aboriginal Australians and the European colonizers avoid many of the tragic conflicts between them? How can applying this truth in our own lives help us in our interactions with others?

Oil Spills



Group Lab Activities:

Ocean Oil Spills and Cleanup

As you complete the lab activities, answer the following questions by drawing sketches and making notes.

What happens when oil is added to water? Record what you see below.

What property of water causes this to happen?

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What did you observe and learn from Lab Activity #1?

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