

## Extreme of Experience and Limits of Reality

### What are the extremes of experience and limits of reality?

The extremes of experience and limits of reality become of central concern to students' imaginations after they become fluently literate. This fascination with extremes, with the exotic and strange features of reality, is a means by which students' imaginations explore the extent of the real world in which they find themselves. In part, this common fascination we see in newly literate students with, say, the subject matter of *The Guinness Book of World Records* (Who was the biggest, or smallest, or hairiest person? Who had the longest fingernails? Who has pulled the heaviest weight with their teeth, and so on?) is a search for a kind of intellectual security about their own life and circumstances. They are not fascinated by who had the longest fingernails for that person's sake but because it tells them something about proper scale and about norms, by limiting the possible. That is, in a roundabout way they are seeking knowledge about themselves. So when we suggest that teaching will be more effective by occasionally engaging students with the limits of the real world and human experience, we don't mean that to suggest removing any focus on their everyday world. Their new knowledge should empower them to deal better with precisely that. The everyday world around them can become more meaningful, and meaningful in a new way, if they orient to it through attention to the limits or context within which it exists.

### How can we evoke the extremes of experience and limits of reality in teaching?

**Topic:** The Middle Ages

**Subject Area:** Social Studies

**Cognitive Tool:** Extremes of experience and limits of reality

An exotic topic that students can latch onto during a study of the Middle Ages is the ordeal trials, specifically trial by water and trial by fire. Students are fascinated by these strange and gruesome ways of seeking justice. If someone was accused of a crime in medieval times, such as stealing a pig, putting him on trial was the way to discern his innocence. Trial by fire consisted of holding a burning rod to the skin. If the resulting welt was half the size of a walnut or bigger, the accused was found to be guilty. In trial by water, the accused would be bound hand and foot then thrown into a river or pond. If he sank to the bottom he was proclaimed innocent, whereas if he floated to the top, he was found guilty. To the medieval citizen, the outcome of these trials demonstrated the infallible judgment of God; therefore, the result would be unquestioned.

**Topic:** Historical/cultural influences on fashion/textile choice

**Subject Area:** Textiles

**Cognitive Tool:** Extremes of Experience and Limits of Reality

Examples of the odd and weird are pretty easy to find when it comes to fashion. To investigate the historical and cultural influences on fashion and textile choices, students could be asked to reflect on the kinds of outfits supermodels wear on the “catwalks” of Paris or Milan. Are they noticing anything about the styles of these articles of clothing or designs? Of course, it is easy to see that fashion has its extremes in every era and every context. How different are the clothes in a New York fashion show demonstrating the latest styles of an avant-garde designer compared to the kinds of outlandish outfits worn during the French Revolution? Students can be asked to look historically at extreme examples of fashion from around the world. Following an investigation of the kinds of extremes in fashion that have emerged historically they may be asked to consider what is “new” in fashion; is it a “new” style or is it a return to an old one?

**Topic:** Exploration

**Subject Area:** Social Studies

**Cognitive Tool:** Extremes of experience and limits of reality

Some days I do not think I can survive without my morning cup of coffee. The hardship! The experiences of explorers take the notion of hardship to a totally different level most of our students will never experience. A human being can survive for only a few days without potable water, and maybe a few weeks without food. For explorers in the 17th and 18th century, lack of food and water was only one of many potential causes of death. Many were lost at sea, died of illnesses on board ships, were devoured by wild animals on land, or succumbed to harsh climates. What were the most outstanding stories of survival or loss? The stories of explorers’ courage and endurance in the face of unthinkable conditions on sea and land, represent the kind of extreme content that can best embody the heroic quality around which we are shaping the unit. Shackleton’s adventure was, certainly, a remarkable survival story full of extreme challenges. With great endurance and courageous determination, the crew managed to overcome these challenges. After Shackleton and a few men left in a rowboat from Elephant Island to get help, in a direction they hoped would lead them to land, the rest of the crew managed to survive on seals and the odd fish they caught, melted ice and snow, and the limited shelter of an overturned rowboat. If we look closely into the stories of any explorer we will find these emotional charged images of determination that can help students feel more meaningfully what exploration really entailed for human beings.

In looking at the European age of exploration we might have students investigate the longest journeys, the countries that sent off the greatest number of expeditions, the best and worst kinds of ships for expeditions, or which expeditions had the greatest losses of life due to scurvy or other causes. We could focus on the hardships faced by overland expeditions, the kinds of challenges climates (the wettest, driest, coldest, hottest) posed, the hardships and dangers caused by attacking insects or wild animals. We might consider the scope of travel and experiences of explorers in different time periods, beginning with the ancients through to modern day. What are the most amazing stories of survival? How do the survival stories of people who have attempted to climb Mount Everest compare to what it was like for the explorers on wooden ships crossing the Atlantic in the 15th century? What were the most remarkable advances in technology to support these journeys? We could consider modern day

exploration into the deepest parts of the ocean, deep into the Earth, or into the far reaches of outer space. What kinds of exploration contain the most risk? Which have potentially the most benefits in terms of human knowledge and understanding? What were the most astonishing discoveries historically? What are the most exciting modern day discoveries? Should we send humans to Mars, or instead let robots do all the exploration for us? How long can one last in the morning without coffee!?

**Topic:** The Water Cycle

**Subject Area:** Science

**Cognitive Tool:** Extremes of experience and limits of reality

By looking at the extremes of the water cycle, we help students understand and define its limits. Consider the extreme and exotic places that water might travel. It might move into the deep ocean depths where strange fish live without sight or perhaps float high in the clouds that circle the tip of Mount Everest. It might settle into the thick layers of an ancient glacier to be frozen for a millennium or be trapped in the body of the biggest blue whale or in the tiniest plankton. We might find that water's journey leads to the heart of a cactus growing in the driest desert or even into the sweat of a famous athlete. That water we drink today might have been a tear of Cleopatra's at one time—to pick up on another cognitive tool.

**Topic:** Eels

**Subject Area:** Science

**Cognitive Tool:** Extremes of experience and limits of reality

In the imaginative classroom teachers will be alert to the powerful urge students have to find intellectual security amid all the “stuff” that is out there to be learned. The attraction to the extremes of reality suggests that the teacher might provide a large poster, maybe mounted on a wall, onto which students might enter “records” they have discovered about a topic. If the topic is the study of eels, students can “collect” the longest eels, the shortest eels, the fattest eels, the slimmest eels, the ugliest eels, the most beautiful eels, the longest living eels, the shortest living eels, the strangest eels, the most voracious eels, the most dangerous eels, the longest migrating eels, and so on. Or they might be given the task of charting the changes eel larvae go through. If students are engaged in making exhaustive lists, preferably of extreme features, or charting exhaustive knowledge of something dramatic, such activities will commonly trigger the cognitive tool evident in collecting and hobbies. They will also learn a great deal with some enthusiasm usually.

**Why do the extremes of experience and limits of reality engage our imaginations?**

The reason literacy encourages a new conception of reality and a fascination with its extreme and odd features is not hard to understand. If, with unusual generosity, we arranged to fly you to a north Italian hill town and invited you to explore it, you wouldn't pull out a magnifying glass and start examining the details of your hotel room's carpet and wallpaper, before working gradually down the corridor and into the street. You'd probably set about locating the main

square and the cathedral, discovering where the town walls were, and examining the more unusual buildings. Your attention would also be drawn to the behaviors, clothing, artifacts, and customs most unfamiliar to you. That is, in any new environment we strive to orient ourselves by establishing the limits of the environment and its most outstanding features. It is a sensible strategy, and we see it vividly at work when literacy stimulates a new conception of reality. (For an exploration of why literacy should stimulate this new sense of reality, see Egan, 1997.)

A part of the folklore of education—something we hear constantly repeated in teacher education programs and in books for pre-service teachers—is that one must always begin from what the student already knows. Indeed, the psychologist who described using “advance organizers” wrote that he considered this finding the most crucial contribution of psychology to education (Ausubel, 1968). It seems so obvious, especially after endless repetition. How can this principle explain why most students want to know who had the longest fingernails ever? Well, yes, students all have fingernails. But at this level the principle is trite. It suggests that you can interest students best by starting with what they are already familiar with in their environment. In my experience, at around the age of ten most students are bored out of their minds by the things in their local environment and are much more interested in the weird, strange, and exotic—in things most distant and different from their experience. By looking at students’ fascination with the content of such TV shows as *Ripley’s Believe It Or Not* or with other sensationalist shows, comics, or papers we can get a clue to what engages their imaginations.

We sometimes offer this scenario to teachers as a joke example: Say you have to take your colleague’s class because she became ill suddenly. She left two lessons with appropriate materials ready, and it is a Friday afternoon, and you have been asked to keep the students engaged because they might have been disturbed by her sudden illness. The first lesson plan is “The structure of your local neighborhood,” and the second is “The most daring spies in history.” Which do you think might be more engaging to the students? Well, yes, one could, using all the principles explored here, make the local neighborhood exciting. But if the principle about starting with what the student already knows is supposed to engage the students’ interest better, then the lesson on the neighborhood should win hands down. It doesn’t. Quite the opposite—and that means something must be wrong with the principle. (For a more extensive description of what is wrong with it, see Egan, 2003.)

In the imaginative classroom we will commonly include whatever is extreme or strange or exotic about a topic. While examining the life cycle of some animal or insect, we will find it useful to compare it with those of the most astonishing creatures. Cicadas that live underground and emerge once every seventeen years, and breed in their trillions, then die, clogging towns and rivers and fields, capture one extreme of insect life cycles. When teaching about the Industrial Revolution we will illustrate the changes it brought about by searching out its most dramatic and astonishing achievements. So we might consider the sequence of building iron ships and bring into focus the achievements of Isambard Kingdom Brunel. After the early iron ships—weighing up to a few hundred tons—were built, he set about building his *Great Eastern*. That ship weighed in at about twenty-four thousand tons, required specially forged chains to launch, and nearly capsized—destroying the dock.