Walk around the room and read the posted experiments from a book entitled *Elephants on Acid*. On the other side of this sheet you will find a matrix. Summarize in one sentence each experiment you read about. (This is so you can refer back to them later in the period.)

After you’re done with your summaries, you may return to your seat.

Individually, please choose the top 5 WORST experiments (the ones you find most appalling) and the 5 that you don’t think are so bad. Label them W for worst and LW for least-worst. After you’re done with this, put a star next to the experiment you find most appalling.

Next, in a group, please come up with a group top 5 for the worst and the least-worst. Discuss each other’s lists. Give insight as to why you agree or disagree. Talk it over. Debate. (This should take more than 5 minutes.)

Be ready to discuss and debate your opinion, your group’s opinions, and what the class thinks.

As a class, we will attempt to award an experiment “The Most Unethical Experiment Ever Award.”

*Adapted from Allison Shaver, Plymouth South HS, MA*
<table>
<thead>
<tr>
<th>#1 Elephants on Acid</th>
<th>#4 Facial Expressions</th>
<th>#7 The Ape and the Child</th>
<th>#10 Wanna Sleep with Me?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2 Heterosexual Behavior</td>
<td>#5 Beneficial Brainwashing</td>
<td>#8 Fingernails</td>
<td>#11 Shock the Puppy</td>
</tr>
<tr>
<td>#3 Human-Ape Hybrid</td>
<td>#6 Remote-Controlled Bull</td>
<td>#9 Turkey Sex</td>
<td>#12 Heartbeat at Death</td>
</tr>
</tbody>
</table>
What happens if you give an elephant LSD? On Friday August 3, 1962, a group of Oklahoma City researchers decided to find out.

Warren Thomas, Director of the City Zoo, fired a cartridge-syringe containing 297 milligrams of LSD into Tusko the Elephant's rump. With Thomas were two scientific colleagues from the University of Oklahoma School of Medicine, Louis Jolyon West and Chester M. Pierce.

297 milligrams is a lot of LSD — about 3000 times the level of a typical human dose. In fact, it remains the largest dose of LSD ever given to a living creature. The researchers figured that, if they were going to give an elephant LSD, they better not give him too little.

Thomas, West, and Pierce later explained that the experiment was designed to find out if LSD would induce musth in an elephant — musth being a kind of temporary madness male elephants sometimes experience during which they become highly aggressive and secrete a sticky fluid from their temporal glands. But one suspects a small element of ghoulish curiosity might also have been involved.

Whatever the reason for the experiment, it almost immediately went awry. Tusko reacted to the shot as if a bee had stung him. He trumpeted around his pen for a few minutes, and then keeled over on his side. Horrified, the researchers tried to revive him, but about an hour later he was dead. The three scientists sheepishly concluded that, "It appears that the elephant is highly sensitive to the effects of LSD."
#2: The Initiation of Heterosexual Behavior in a Homosexual Male

In 1954 James Olds and Peter Milner of McGill University discovered that the septal region is the feel-good center of the brain. Electrical stimulation of it produces sensations of intense pleasure and sexual arousal. They demonstrated their discovery by inserting wires into a rat's brain and then showing that when the rat figured out it could self-stimulate itself by pressing a lever, it would maniacally bang on that lever up to two-thousand times an hour.

In 1970, Robert Heath of Tulane University dreamed up a far more novel application of Olds and Milner's discovery. Heath decided to test whether repeated stimulation of the septal region could transform a homosexual man into a heterosexual.

Heath referred to his homosexual subject as patient B-19. He inserted Teflon-insulated electrodes into the septal region of B-19's brain and then gave B-19 carefully controlled amounts of stimulation in experimental sessions. Soon the young man was reporting increased stirrings of sexual motivation. Heath then rigged up a device to allow B-19 to self-stimulate himself. It was like letting a chocoholic loose in a candy shop. B-19 quickly became obsessed with the pleasure button. In one three-hour session he pressed it 1500 times until, as Heath noted, "he was experiencing an almost overwhelming euphoria and elation and had to be disconnected."

By this stage of the experiment B-19's libido was so jacked up that Heath decided to proceed with the final stage in which B-19 would be introduced to a sexually-willing female partner. With permission from the state attorney general, Heath arranged for a twenty-one-year-old female prostitute to visit the lab, and he placed her in a room with B-19. For an hour B-19 did nothing, but then the prostitute took the initiative and a successful sexual encounter between the two occurred. Heath considered this a positive result.
For decades dark rumors circulated alleging that the Soviets had conducted experiments to try to create a human-ape hybrid by breeding chimpanzees and humans, but it wasn't until the collapse of the Soviet Union and the opening of Russian archives that the rumors were confirmed.

Dr. Il'ya Ivanov was a world-renowned expert on veterinary reproductive biology, but he wanted to do more in life than breed fatter cows. So in 1927 he traveled to Africa to pursue his vision of interbreeding man and ape.

Thankfully his efforts weren't successful. To a great degree this was due to the native staff of the West Guinea research facility where he worked, from whom he constantly had to conceal the true purpose of his experiments. If they had found out what he was really doing, he wrote in his diary, "this could have led to very unpleasant consequences." The necessity of carrying out his work in secrecy made it almost impossible to do anything, although he did record two unsuccessful attempts to artificially inseminate female chimpanzees with human sperm.

Frustrated, Ivanov eventually returned to the Soviet Union. He brought an orangutan named Tarzan back with him, hoping to continue his research in a more accepting environment. Back home he advertised for female volunteers willing to carry Tarzan's child, and remarkably he got a few takers. But then Tarzan died and Ivanov himself was sent off to a prison camp for a couple of years. This ended his research. There are vague rumors suggesting that other Soviet scientists continued Ivanov's work, but nothing definite has been proven.
In 1924 Carney Landis, a graduate student in psychology at the University of Minnesota, designed an experiment to study whether emotions evoke characteristic facial expressions. For instance, is there one expression everyone uses to convey shock, and another commonly used to display disgust?

Most of Landis's subjects were fellow graduate students. He brought them into his lab and painted lines on their faces so that he could more easily see the movement of their muscles. He then exposed them to a variety of stimuli designed to provoke a strong psychological reaction. As they reacted, he snapped pictures of their faces. He made them smell ammonia, look at pornographic pictures, and reach their hand into a bucket containing slimy frogs. But the climax of the experiment arrived when he carried out a live white rat on a tray and asked them to decapitate it.

Most people initially resisted his request, but eventually two-thirds did as he ordered. Landis noted that most of them performed the task quite clumsily: "The effort and attempt to hurry usually resulted in a rather awkward and prolonged job of decapitation." For the one-third that refused, Landis eventually picked up the knife and decapitated the rat for them.

Landis's experiment presented a stunning display of the willingness of people to obey the demands of experimenters, no matter how bizarre those demands might be. It anticipated the results of Milgram's obedience experiment by almost forty years. However, Landis never realized that the compliance of his subjects was far more interesting than their facial expressions. Landis remained single-mindedly focused on his initial research topic, even though he never was able to match up emotions and expressions. It turns out that people use a wide variety of expressions to convey the same emotion — even an emotion such as disgust at having to decapitate a rat.
#5: Beneficial Brainwashing

Dr. Ewen Cameron believed he had come up with a cure for schizophrenia. His theory was that the brain could be reprogrammed to think in healthy ways by forcibly imposing new thought patterns on it. His method was to make patients wear headphones and listen to audio messages looped over and over, sometimes for days or even weeks at a time. He called this method "psychic driving," because the messages were being driven into the psyche. The press hailed it as "beneficial brainwashing."

During the 1950s and early 1960s, hundreds of Cameron's patients at Montreal's Allan Memorial Clinic became his unwitting test subjects — whether or not they actually had schizophrenia. Some patients checked in complaining of problems as minor as menopause-related anxiety, only to find themselves sedated with barbiturates, strapped into a bed, and forced to listen for days on end to messages such as "People like you and need you. You have confidence in yourself."

One time, to test the technique, Cameron placed patients into a drugged sleep and made them listen to the message, "When you see a piece of paper, you want to pick it up." Later he drove them to a local gymnasium. There, lying in the middle of the gym floor, was a single piece of paper. He happily reported that many of them spontaneously walked over to pick it up.

When the CIA learned of what Cameron was doing, it became interested and started surreptitiously channeling him money. But eventually the agency concluded that Cameron's technique was a failure and cut his funding, prompting Cameron himself to admit that his experiments had been "a ten year trip down the wrong road." In the late 1970s a group of Cameron's former patients filed suit against the CIA for its support of his work and reached an out-of-court settlement for an undisclosed amount of money.
#6: The Remote-Controlled Bull

Yale researcher Jose Delgado stood in the hot sun of a bullring in Cordova, Spain. With him in the ring was a large, angry bull. The animal noticed him and began to charge. It gathered speed. Delgado appeared defenseless, but when the bull was mere feet away, Delgado pressed a button on a remote control unit in his hand, sending a signal to a chip implanted in the bull's brain. Abruptly, the animal stopped in its tracks. It huffed and puffed a few times, and then walked docilely away.

Delgado's experience in the ring was an experimental demonstration of the ability of his "stimoceiver" to manipulate behavior. The stimoceiver was a computer chip, operated by a remote-control unit, that could be used to electrically stimulate different regions of an animal's brain. Such stimulation could produce a wide variety of effects, including the involuntary movement of limbs, the eliciting of emotions such as love or rage, or the inhibition of appetite. It could also be used, as Delgado showed, to stop a charging bull.

Delgado's experiment sounds so much like science fiction, that many people are surprised to learn it occurred back in 1963. During the 1970s and 80s, research into electrical stimulation of the brain (ESB) languished, stigmatized by the perception that it represented an effort to control people's minds and thoughts. But more recently, ESB research has once again been flourishing, with reports of researchers creating remote-controlled rats, pigeons, and even sharks.
History contains numerous accounts of children raised by animals. The children in such cases often continue to act more animal than human, even when returned to human society. The psychologist Winthrop Kellogg wondered what would happen if the situation were reversed. What if an animal were raised by humans — as a human. Would it eventually act like a human?

To answer this question, in 1931 Kellogg brought a seven-month-old female chimpanzee named Gua into his home. He and his wife then proceeded to raise her as if she were human, treating her exactly the same as they treated their ten-month-old son Donald.

Donald and Gua played together. They were fed together. And the Kelloggs subjected them both to regular tests to track their development. One such test was the suspended cookie test, in which the Kelloggs timed how long it took their children to reach a cookie suspended by a string in the middle of the room.

Gua regularly performed better on such tests than Donald, but in terms of language acquisition she was a disappointment. Despite the Kelloggs's repeated efforts, the ability to speak eluded her. Disturbingly, it also seemed to be eluding Donald. Nine months into the experiment, his language skills weren't much better than Gua's. When he one day indicated he was hungry by imitating Gua's "food bark," the Kelloggs decided the experiment had gone far enough. Donald evidently needed some playmates of his own species. So on March 28, 1932 they shipped Gua back to the primate center. She was never heard from again.
In the summer of 1942 Professor Lawrence Leshan stood in the darkness of a cabin in an upstate New York camp where a row of young boys lay sleeping. He spoke aloud, repeating a single phrase over and over, "My fingernails taste terribly bitter. My fingernails taste terribly bitter."

Nowadays that kind of behavior could get one locked away, but Leshan wasn't mad. He was conducting a sleep-learning experiment. All the boys had been diagnosed as chronic nail-biters, and Leshan wanted to find out if nocturnal exposure to a negative suggestion about nail biting would cure them of their bad habit.

Leshan initially used a phonograph to play the message. It faithfully repeated the phrase 300 times a night as the boys lay sleeping. But five weeks into the experiment, the phonograph broke. Leshan improvised by standing in the darkness and speaking the message himself.

At the end of the summer, Leshan examined the boys' nails and concluded that 40% of them had kicked the habit. The sleep-learning effect seemed to be real. However, other researchers later disputed this conclusion. In a 1956 experiment at Santa Monica College, William Emmons and Charles Simon used an electroencephalograph to make sure subjects were fully asleep before playing a message. Under these conditions, the sleep-learning effect disappeared.
Male turkeys aren't fussy. Give them a lifelike model of a female turkey and they'll happily try to mate with it as eagerly as they would with the real thing.

This observation intrigued Martin Schein and Edgar Hale of the University of Pennsylvania, and made them curious about what might be the minimal stimulus required to excite a turkey. They embarked on a series of experiments to find out. This involved removing parts from the turkey model one by one, until the male turkey eventually lost interest.

Tail, feet, and wings were all removed, but still the clueless bird waddled up to the model, let out an amorous gobble, and tried to do his thing. Finally, the researchers were left with a head on a stick. And surprisingly, the male turkey still showed great interest. In fact, it preferred a head on a stick over a headless body.

Schein and Hale subsequently investigated how minimal they could make the head itself before it failed to elicit a response. They discovered that freshly severed female heads impaled on sticks worked best, but if the male turkey had nothing else it would settle for a plain balsa wood head. Turkeys evidently adhere to the philosophy that if you can't be with the one you love, then love the one you're with.

Curious about the mating habits of other poultry, Schein and Hale performed similar tests on White Leghorn Cocks. For those curious, they published their results in an article that boasts one of the most evocative titles in all of science: "Effects of morphological variations of chicken models on sexual responses of cocks."
If you were a man walking across the campus of Florida State University in 1978, an attractive young woman might have approached you and said these exact words: "I have been noticing you around campus. I find you to be attractive. Would you go to bed with me tonight?"

If you were that man, you probably would have thought that you had just gotten incredibly lucky. But not really. You were actually an unwitting subject in an experiment designed by the psychologist Russell Clark.

Clark had persuaded the students of his social psychology class to help him find out which gender, in a real-life situation, would be more receptive to a sexual offer from a stranger. The only way to find out, he figured, was to actually get out there and see what would happen. So young men and women from his class fanned out across campus and began propositioning strangers.

The results weren't very surprising. Seventy-five percent of guys were happy to oblige an attractive female stranger (and those who said no typically offered an excuse such as, "I'm married"). But not a single woman accepted the identical offer of an attractive male. In fact, most of them demanded the guy leave her alone.

At first the psychological community dismissed Clark's experiment as a trivial stunt, but gradually his experiment gained first acceptance, and then praise for how dramatically it revealed the differing sexual attitudes of men and women. Today it's considered a classic. But why men and women display such different attitudes remains as hotly debated as ever.
When Stanley Milgram published the results of his obedience experiment in 1963, it sent shockwaves through the scientific community. Other researchers found it hard to believe that people could be so easily manipulated, and they searched for any mistakes Milgram might have made. Charles Sheridan and Richard King theorized that perhaps Milgram's subjects had merely played along with the experiment because they realized the victim was faking his cries of pain. To test this possibility, Sheridan and King decided to repeat Milgram's experiment, introducing one significant difference. Instead of using an actor, they would use an actual victim who would really get shocked. Obviously they couldn't use a human for this purpose, so they used the next best thing — a cute, fluffy puppy.

Sheridan and King told their subjects — volunteers from an undergraduate psychology course — that the puppy was being trained to distinguish between a flickering and a steady light. It had to stand either to the right or the left depending on the cue from the light. If the animal failed to stand in the correct place, the subjects had to press a switch to shock it. As in the Milgram experiment, the shock level increased 15 volts for every wrong answer. But unlike the Milgram experiment, the puppy really was getting zapped.

As the voltage increased, the puppy first barked, then jumped up and down, and finally started howling with pain. The volunteers were horrified. They paced back and forth, hyperventilated, and gestured with their hands to show the puppy where to stand. Many openly wept. Yet the majority of them, twenty out of twenty-six, kept pushing the shock button right up to the maximum voltage.

Intriguingly, the six students who refused to go on were all men. All thirteen women who participated in the experiment obeyed right up until the end.
On October 31, 1938, John Deering took a last drag on his cigarette, sat down in a chair, and allowed a prison guard to place a black hood over his head and pin a target to his chest. Next the guard attached electronic sensors to Deering's wrists.

Deering had volunteered to participate in an experiment, the first of its kind, to have his heartbeat recorded as he was shot through the chest by a firing squad. The prison physician, Dr. Stephen Besley, figured that since Deering was being executed anyway, science might as well benefit from the event. Perhaps some valuable information about the effect of fear on the heart could be learned.

The electrocardiogram immediately disclosed that, despite Deering's calm exterior, his heart was beating like a jackhammer at 120 beats per minute. The sheriff gave the order to fire, and Deering's heartbeat raced up to 180 beats per minute. Then four bullets ripped into his chest, knocking him back in his chair. One bullet bore directly into the right side of his heart. For four seconds his heart spasmed. A moment later it spasmed again. Then the rhythm gradually declined until, 15.4 seconds after the first shot, Deering's heart stopped.

The next day Dr. Besley offered the press a eulogy of sorts for Deering: "He put on a good front. The electrocardiograph film shows his bold demeanor hid the actual emotions pounding within him. He was scared to death."