CaveSim Programs for Texas Middle Schools

Prepared by Dave Jackson, CaveSim inventor and program lead. Contact Dave: dave@cavesim.com

Hands-on physics lesson at a 6th grade program in 2018

Student quote, while working on a Petri dish during the CaveSim Biota Lab: "Mrs. Chaney [the HS biology teacher], why don't we get to do this kind of stuff in biology class?" CaveSim staff person, "This is biology class!" The students in this class were having so much fun learning that they forgot they were in class.

Teacher quote: "CaveSim was amazing. I had students come up to me the next day, give me a big hug and say 'Thank you Ms. Jones for having the cave at our school. It was so fun.' The students were able to understand cave formations, organisms and cave safety. You and the other cave experts were fantastic. You were able to share important content related to earth science and life science. Each part of the presentation was aligned to our science standards. They particularly loved climbing through the cave and the 'tower'. Mike was great. Thanks for all that you do. We would love to see you back next year." **— Patricia Jones, teacher, Houston Elementary, Austin ISD**

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Summary

Thanks for your interest in CaveSim! The centerpiece of our program is a mobile CaveSim system, which we'll bring from Colorado to your school in a 24' trailer. The cave is filled with stalactites, critters, and artifacts (all artificial). Students get a computerized score based on how carefully they avoid the stalagmites and other objects as they explore. We'll also bring you many TEKS-aligned hands-on lessons. Our middle school programs are tailored specifically to MS TEKS, and cover a wide range of subjects including science, math, engineering, PE, and art.

Programs are led by MIT-trained CaveSim inventor Dave Jackson. Dave and his wife Tracy (both real cavers) have taught CaveSim programs around the US since 2010. Tracy has a Masters in Teaching from Colorado College. Dave and other CaveSim staff teach the programs.

In addition to learning a wide range of classroom subjects, students also learn that they can do what Dave and Tracy have done: take what they've learned in school and use it to follow their passions to make the world just a little bit better.

We look forward to bringing CaveSim to your school to engage your students in a whole new way, and we're excited about working with you.

Texas schools that have done and loved our programs

Austin: Austin HS, McCallum HS, Andrews ES, Baranoff ES, Barrington ES, Barton Hills ES, Blanton ES, Boone ES, Brentwood ES, Cowan ES, Hill ES, Houston ES, NYOS, Pecan Springs ES, Sanchez ES, T.A. Brown ES, Wooldridge ES; Georgetown: Frost ES; Hays: Dahlstrom MS; Granbury: Brawner Intermediate; Baccus ES; Lake Travis: Lakeway ES; Hutto MS; New Braunfels: Memorial ES; Dripping Springs: Sycamore Springs ES; Conroe: Creighton ES; Del Valle Elementary.

Program Components (with TEKS alignment)

Standard components are included in the cost of the program. Programs are typically conducted by having students work with us at a series of different stations/lessons.

CaveSim program element: Horizontal Cave Exploration	Corresponding TEKS	Photos of past CaveSim programs
In CaveSim mobile cave (contains 60' of passage with multiple levels in a 24' trailer). While wearing helmets, students explore the cave in small groups and:		 *Thrilled to be exploring CaveSim in Glenwood Springs, CO, 2018. Photo by Chelsea Self, Post Independent.*
• Try to avoid bumping into artificial cave formations. Students learn that touching formations can cover them with skin oil, which stops the formations from growing (we introduce the concept of water being polar, and oil being non-polar).	§112.20. Science, Grade 8, b) 5) Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to: A) describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud	
• Look for cave biota (critters, all artificial), and discuss the cave ecosystem after they exit the cave. CaveSim staff teaches about the cave-specific ecosystem, including the amazing lampshade spider, which eats fungus gnats, which eat fungus, which eat deceased bats, etc.	§112.19. Science, Grade 7, b) 5) B) diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids	
• Learn about how cave passage forms. CaveSim staff talk about extremophile bacteria that produce enzymes to metabolize limestone (breaking chemical bonds to harvest energy).	§112.18. Science, Grade 6, b) 12) E) describe biotic and abiotic parts of an ecosystem in which organisms interact. §112.20. Science, Grade 8, b) 5) Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to: A) describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud	 *Science teachers in Colorado learn about CaveSim and get ready to explore.*
• Staff and students discuss the formation of sinkholes (common in Texas), and the benefits / dangers that they afford humans. Demo available upon request: dissolution of carbonate rocks using weak acid.	§112.19. Science, Grade 7, b) 8) B) analyze the effects of weathering, erosion, and deposition on the environment in ecoregions of Texas; and (C) model the effects of human activity on groundwater and surface water in a watershed	
• CaveSim staff explain how aqueous cave formations (helictites, soda straws, gypsum) form. Topics covered: capillary action can cause water to wick uphill against gravity due to water's adhesive properties (examples given: water climbing up a towel, water flow inside cave formations). Students are introduced to or review the concept of capillary action, and a connection is drawn to blood flow in our bodies.	§112.19. Science, Grade 7, b) 7) B) demonstrate and illustrate forces that affect motion in organisms such as ... circulation of blood.	
• Look for indigenous cave artifacts and rock art, and discuss the importance of such artifacts to native people and to archaeologists and anthropologists. Hear a real-life story about a CaveSim staff member's experience with artifacts while exploring caves in Mexico. Students discuss why we don't take native artifacts or damage native art. The differences between graffiti and art are discussed.	§113.18. Social Studies, Grade 6, b) 18) Culture. The student understands the relationship that exists between the arts and the societies in which they are produced. The student is expected to: (A) explain the relationships that exist between societies and their architecture, art, music, and literature	

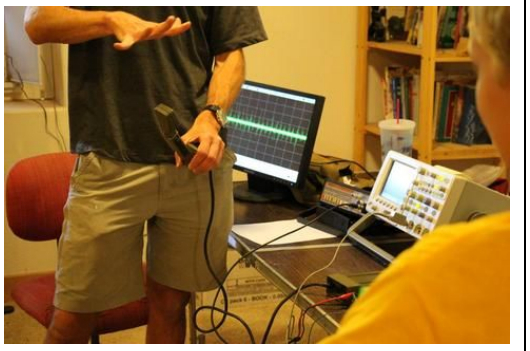
Space required: the 24' trailer is typically kept outside. See www.cavesim.com/site-logistics for more details. In inclement weather, we may close the trailer and do indoor activities.

CaveSim program element: Bat biology	Corresponding TEKS	Photos of past CaveSim programs
Using a bat skeleton and a sealed container of real bat guano, we do the following lessons:		 *CaveSim program lead Dave Jackson teaches kids about bat biology in Glenwood Springs, CO. Photo by Chelsea Self, Post Independent.*
• Discussion of similarities and differences between bat wing structure and human hands. Discussion of evolutionary pressures that may have created the similarities and differences.	§112.19. Science, Grade 7, b) 14) A) define heredity as the passage of genetic instructions from one generation to the next generation; C) recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus.	
• Discussion of different types/sizes of bats, and how their behavior differs. Also discuss the role that they play in helping humans. We discuss a real-life lesson about bat eradication by farmers and the impact on their crops.	§112.19. Science, Grade 7, b) 11) Organisms and environments. The student knows that populations and species demonstrate variation and inherit many of their unique traits through gradual processes over many generations. The student is expected to: (A) examine organisms or their structures…. (B) explain variation within a population or species by comparing external features, behaviors, or physiology of organisms that enhance their survival such as migration, hibernation,...	
• Discussion of bat tail structure and usage of the tail in steering, balance, and in catching insects (in the case of the Little Brown Bat and some other insectivorous bats)	§112.19. Science, Grade 7, b) 12) A) investigate and explain how internal structures of organisms have adaptations that allow specific functions….	
• Photographic and/or video demonstration of the ongoing White Nose Syndrome (WNS) epidemic that has killed nearly 6 million bats in the last ~13 years. For older grades, lesson about the WNS fungus (Pseudogymnoascus destrucans) and how it eats (metabolizes) bats alive, and causes them to come out of hibernation (in the wrong season) to try to find food. Lesson about European bat biodiversity is inferior to that in the US because WNS passed through Europe decades ago and selectively decimated certain species.	§112.19. Science, Grade 7, b) 10) Organisms and environments. The student knows that there is a relationship between organisms and the environment. The student is expected to: (A) observe and describe how different environments, including microhabitats in schoolyards and biomes, support different varieties of organisms; (B) describe how biodiversity contributes to the sustainability of an ecosystem. 13) A) investigate how organisms respond to external stimuli found in the environment….	
• Discussions of **TX history** & the role TX caves played in the civil war (saltpeter for gunpowder), including caves in New Braunfels where miners removed >1 ton of guano/day. We use students' understanding of elements & compounds to discuss how potassium nitrate (from guano) was mixed w/ charcoal and sulfur to make black powder.	§112.18. Science, Grade 6, b) 5) A) know that an element is a pure substance represented by a chemical symbol and that a compound is a pure substance represented by a chemical formula.	

CaveSim program element: Bat Epidemiology	Corresponding TEKS	Photos of past CaveSim programs
As mentioned above, millions of bats are dying in the US from WNS. Students learn about the spread of this disease, and about the overarching epidemiological concepts, through a hands-on lab. Students use fluorescent dye to model the spread of the "disease". Students play the game in multiple rounds, with the number of bat-bat interactions being equal to the round number. Students make a graph of interaction count vs. disease prevalence. Random vs. deterministic processes are discussed.	§112.18. Science, Grade 6, b) 2) D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. §112.19. Science, Grade 7, b) 2) D) and E) [same as above] §112.20. Science, Grade 8, b) 2) D) and E) [same as above] §111.27. Math, Grade 7, b) 6) Proportionality. The student applies mathematical process standards to use probability and statistics to describe or solve problems involving proportional relationships. D) make predictions and determine solutions using theoretical probability for simple and compound events;	 *6th & 7th graders in Denver have fun with epidemiology*

CaveSim program element: Vertical Caving	Corresponding TEKS	Photos of past CaveSim programs
On CaveSim portable 12' A-frame w/ crash pads:		
• While wearing helmets, students use a Bosun's chair, ropes, and pulleys to learn about mechanical advantage afforded by 1:1 and 5:1 pulley systems, and learn that work is unchanged when a mechanical advantage is introduced. Students work together to lift a fellow student up the tower using the different systems. Students study the system to determine that the 5:1 pulley system reduces the required lifting force by a factor of 5 while increasing the amount of rope that must be pulled by a factor of 5 (conservation of work). Students get hands-on experience with the concept of potential and kinetic energy through the lowering of their fellow student from the tower.	§112.18. Science, Grade 6, b) 8) A) compare and contrast potential and kinetic energy; (B) identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces. §112.20. Science, Grade 8, b) 6) Force, motion, and energy. The student knows that there is a relationship between force, motion, and energy. The student is expected to: (A) demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion; (B) differentiate between speed, velocity, and acceleration; and (C) investigate and describe applications of Newton's three laws of motion such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches.	 *Above, a student in Colorado uses mechanical advantage to lift herself up the A-frame.* *Below, students in Montana work together under direct supervision from staff to lift a fellow student .* 
• CaveSim staff use harnesses and mechanical ascenders to ascend the A-frame. CaveSim staff discuss the ascender mechanics, as well as equipment safety and the important differences between caving and rock climbing equipment. Students learn about current events in vertical caving, including ongoing efforts in Mexico to find the world's deepest cave. Students learn that some of the cavers who help with CaveSim have been over 6000' underground.	§116.22. Physical Education, Grade 6, a) 2) Identifying the types of activities that provide them with enjoyment and challenge and that will encourage them to be physically active throughout life is reinforced during instruction in these grades. §116.24. Physical Education, Grade 8, a) 2) ...emphasis is placed more on participation for enjoyment and challenge, both in and out of school. Understanding the need to remain physically active throughout life by participating in enjoyable lifetime activities is the basis for eighth grade instruction.	
• With the help of students, CaveSim staff demonstrate the power of friction to rapidly destroy Nylon rope. Before the demonstration, students are encouraged to develop hypotheses about what will happen when two ropes are rubbed together, and then develop hypotheses about which rope will break first. After the two ropes are rubbed together rapidly and the larger rope breaks, students are encouraged to try to figure out why the larger rope broke (because of the way the experiment is done, the heat is concentrated in just one spot on the larger rope, and spread out on the smaller rope, hence the melting of the larger rope). • With the help of students, CaveSim staff demonstrate the power of friction to allow a person to ascend a rope using the Prusik knot. Depending on available time, students learn to tie the Prusik, the Alpine Butterfly, the Lark's Head, and/or other knots.		
Space required: typically outdoors on flat ground. May also be placed indoors where ceiling height is >12'6". Footprint is 8' x 9'.		

CaveSim program element: Carbide Demonstrations	Corresponding TEKS	Photos of past CaveSim programs
To illustrate chemistry and physics concepts, CaveSim staff bring working carbide lamps and carbide to programs. Demonstrations can include: ● CaveSim staff light a working carbide lamp by placing carbide and water in the lamp to produce a small (and safe) quantity of flammable gas. The resultant gas (acetylene) burns to produce light and heat, but the lamp body also becomes warm because of the exothermic reaction between the carbide and water. Students can touch the lamp body to get a better understanding of the concept of an exothermic reaction. Older students gain an understanding of the concept of reflectors by observing the behavior of the reflector on the lamps. New vocabulary explained by CaveSim staff: “exothermic,” with connection drawn to “exoskeleton.” ● CaveSim staff place carbide and ice in an open pan. As the ice melts, the water reacts with the carbide, producing the aforementioned acetylene gas. CaveSim staff discuss states of matter (solid ice turns to liquid water as it’s heated by the carbide, and then to vapor as it boils). For older students, the concept of limiting reactants is introduced. By watching the exciting reaction occur, students gain a more intuitive understanding of the concept of a chemical reaction. New vocabulary taught by CaveSim staff: “reaction”, “reactant.” ● Science experiment safety is emphasized (e.g., firmly close containers when not in use). ● Fire safety is emphasized, with an emphasis on who is allowed to make a fire (a responsible adult), what must be present (a method of extinguishing the fire), where the fire should be made (in a safe container away from other fuel sources). <u>Space required</u>: typically conducted outdoors, but cannot be done in the rain. May be done indoors in an appropriate lab setting where a small quantity of smoke may be safely produced without setting off alarms or creating hazardous conditions. The smoke produced in this activity is equivalent to the smoke produced by extinguishing about a dozen birthday candles.	§112.18. Science, Grade 6, b) 5) C) identify the formation of a new substance by using the evidence of a possible chemical change such as production of a gas, change in temperature, production of a precipitate, or color change. §112.18. Science, Grade 6, b) 9) Force, motion, and energy. The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form. The student is expected to: (A) investigate methods of thermal energy transfer, including conduction, convection, and radiation; (B) verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature such as an ice cube melting; and (C) demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy. §112.20. Science, Grade 8, b) 5) D) recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts; and (E) investigate how evidence of chemical reactions indicates that new substances with different properties are formed and how that relates to the law of conservation of mass.	 *Above, carbide lamp demonstration by CaveSim staff at a program in Colorado.* *Below, stock photo of the lamps we use.* 

CaveSim program element: Cave Rescue Phones	Corresponding TEKS	Photos of past CaveSim programs
Hands-on lessons about basic circuits using a pair of wired cave rescue phones. Activities include:		 *Two friends enjoy talking on the cave rescue phones during a 2018 CaveSim program in Oklahoma.*
• We bring two cave rescue phones to our programs. The phones are connected by wire, which allows us to discuss basic circuits, and demonstrate that a circuit requires at least one complete loop to function. Students can disconnect and reconnect wires for hands-on learning about conductors and insulators. Students talk with each other over the phones. CaveSim staff discuss the relationship between wire length, electrical resistance, electrical energy dissipation in the wire, and phone volume. Electrical circuits involving the earth as one of the conductor are discussed.	[Reinforces concepts learned in earlier grades, and introduces additional STEM-related electronics concepts]	
• Available upon request: Demonstrations with an oscilloscope (see https://whatis.techtarget.com/definition/oscilloscope) by CaveSim owner Dave Jackson, who has designed high speed computer chips for oscilloscopes. The oscilloscope produces a graphical representation of voltage on the cave rescue phone wire vs. time, which allows students to visualize their vocal energy on a screen. We discuss graph axes, and the relationship between time-based and frequency based graphs. Resonances/oscillation of electrical and sound signals are also discussed. Students gain a more concrete understanding of the concepts of wavelength and frequency as they relate to time, concepts which are useful in many areas of science (hence the identified TEKS)	§112.20. Science, Grade 8, b) 8) C) identify how different wavelengths of the electromagnetic spectrum such as visible light and radio waves are used to gain information about components in the universe	 *A CaveSim staff person teaches students about electricity and magnetism using cave rescue telephones and electronic test equipment (oscilloscopes).*
Space required: typically outdoors for convenience, but can also be done in any classroom or indoor setting. Oscilloscope demo must be done indoors if raining. The oscilloscope has a VGA output, which can be projected to a smartboard, projector, or computer monitor for better viewing by students.		

CaveSim program element: Squeezebox	Corresponding TEKS	Photos of past CaveSim programs
We bring an adjustable-height wooden box through which students can crawl to safely test their ability to navigate tight spaces. Students use a tape measure to quantify how tight a space they can move through. Space required: typically set up near the stretcher (see Rescue Stretcher). Any indoor or outdoor setting is fine.	§116.22. Physical Education, Grade 6, b) 2) Movement. The student applies movement concepts and principles to the learning and development of motor skills. The student is expected to: (A) know that appropriate practice in static and dynamic setting, attention, and effort are required when learning movement skills; (B) make appropriate changes in performance based on feedback to improve skills	 *A staff member helps a student use a tape measure to quantify their squeezebox skills at a 2018 Austin program.*

CaveSim program element: Rescue Stretcher	Corresponding TEKS	Photos of past CaveSim programs
We bring a cave rescue stretcher (Sked) to our programs. Students take turns getting into the stretcher. With the direct supervision of CaveSim staff, the student in the stretcher is carried through and around obstacles by fellow students. Students learn teamwork, communication, and leadership. Space required: any indoor or outdoor setting. May be done in classrooms or even hallways.	§116.23 and 24. Physical Education, Grades 7&8, b) 1) A) coordinate movements with team mates to achieve team goals.	 *With supervision from CaveSim staff, a team of kids gets ready to lift and carry a friend in the stretcher.*

Labs

Our standard programs (described above) can be enhanced with the addition of our labs. Our labs provide a very in-depth educational experience in a specific subject, such as biology or engineering. We never use kits because our goal is to teach students that engineering and science projects are accessible to them without the use of pre-prepared materials. We emphasize environmental conservation by including post-consumer recyclable materials in our engineering labs. Labs require extra funding for materials and staff time. Contact us for pricing.

CaveSim program element: Biology Lab	Corresponding TEKS	Photos of past CaveSim programs
Students culture cave biota in Petri dishes, and learn that single-celled organisms can demonstrate intelligence. Students choose from multiple experiments, and discuss the factors that impact the outcome of their experiments, including the impact of external stimuli. Subjects covered: Experiment design, scientific method, and biology concepts, including prokaryotic/eukaryotic, kingdoms of life, nuclei, and membranes.	§112.18. Science, Grade 6, b) 4) A) use appropriate tools, including journals/notebooks, beakers, Petri dishes…. 12) Organisms and environments. The student knows all organisms are classified into domains and kingdoms. Organisms within these taxonomic groups share similar characteristics that allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to: (A) understand that all organisms are composed of one or more cells; (B) recognize that the presence of a nucleus is a key factor used to determine whether a cell is prokaryotic or eukaryotic; (C) recognize that the broadest taxonomic classification of living organisms is divided into currently recognized domains; (D) identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized kingdoms. §112.19. Science, Grade 7, b) 4) A) use appropriate tools, including life science models, hand lenses, stereoscopes, microscopes, beakers, Petri dishes…. 12) F) recognize the components of cell theory. 13) A) investigate how organisms respond to external stimuli found in the environment.... §112.20. Science, Grade 8, b) 2) B) design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology;	 *Students at a two-day high school program in Oklahoma get ready to inoculate their Petri dishes.*

CaveSim program element: Engineering Lab	Corresponding TEKS	Photos of past CaveSim programs
Students create circuits using LEDs, switches, batteries, and other components to create an LED light system. They get hands-on experience with soldering (with supervision from CaveSim staff), and then design and make their own caving flashlight enclosure from recyclable materials. After creating their lights, students test their work in water to see if their lights are waterproof. Students have the chance to revise their designs if needed. Subjects covered: Electromagnetics, product design, material science, and mechanical engineering.	§112.18. Science, Grade 6, b) 1) B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials. [also applies to grades 7 and 8] 9) C) demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy.	 *Middle school students in Colorado work on their circuit designs.*

CaveSim program element: Karst Lab	Corresponding TEKS	Photos of past CaveSim programs
Students make their own karst topography using basic household materials. Students add water to their models and watch as sinkholes form in real time. We discuss hydrology, geology, basic chemistry, landforms, states of matter, and the limitations of the small-scale model.	§112.20. Science, Grade 8, b) 3) B) use models to represent aspects of the natural world such as... a geologic feature; (C) identify advantages and limitations of models such as size, scale, properties, and materials.	 *Students in Colorado work on their karst topography models.*

Pricing and FAQ

How much do programs cost? This depends on factors like travel distance, number of days, and number of students. Our average price this year is $1658/day plus transportation costs (transportation is $0 when we are already in your area). Price is negotiable, and includes all program components except labs. Please contact us for a quote: Email jacksondmit@cavesim.com or call 914-330-7824.

Are deposits or contracts required? No. We will reserve your program date(s) once we agree on a price and you send us an email stating that you want us to visit your school at the agreed-upon price.

How are payments made? By check, made out to CaveSim LLC, as specified on the invoice that we'll email you. W9 available upon request.

Does CaveSim carry insurance? Yes. Once you commit to working with us, please let us know if you need a Certificate of Additionally Insured.

Where can I find permission slips? Both paperless and printable versions in English and Spanish are available at cavesim.com/waiver.

How much space is needed? Is power required? See www.cavesim.com/pages/site-logistics

Is this an outdoor activity? Typically yes, though we're happy to drive the trailer through loading docks. The cave does stay inside the trailer. Depending on your building, some or all activities can be set up inside in inclement weather (the tower can be indoors if you have 13+ foot ceilings in some part of your building). In light to moderate rain/snow, we put up tents to protect students and the cave.

Is the cave heated and air conditioned? Yes. Please provide access to 1 working 20A outlet in summer, and 2 outlets (15A and 20A) in winter.

How much setup and takedown time are needed? Typically 1.5 hours for setup, and 1 hour for takedown.

How many students can participate in a day? Depending on the activities that we include, a school program can be anywhere from 25 to 200 students. During public programs, we often work with over 750 kids per day.

Does CaveSim do multi-day programs? Yes. We have done as many as six days in one school district.

Safety and special needs

Teachers/staff can explore the cave, and students with special needs (physical or otherwise) may be assisted by school staff, students, and/or CaveSim staff. While each student is different, numerous wheelchair-bound students have explored CaveSim. Some students may have more difficulty avoiding cave formations, and our only requirement is that each student understand their goal of not touching the formations (for the safety of the system and students). Students who are unable to understand the careful-caving goal may participate in our other activities. CaveSim has night-vision cameras which allow us to check on students as they explore. We also have five access points to allow us to let participants out of the trailer if needed.

We follow the BSA's Youth Protection policy, which includes no 1:1 student/adult interaction.

Challenge by choice

Most students love exploring CaveSim. Occasionally we have a student who is unsure, uncomfortable, or afraid. We encourage him/her to set a goal for themselves and see if they can attain that goal. We teach challenge by choice, and have plenty of activities for students to try.

Classroom management

We've been doing our programs since 2010, and our staff includes former classroom teachers, so we have a good handle on classroom management. Because we spent over two years creating CaveSim, we set expectations at the start of the program: we expect students to respect the equipment and everyone involved in the program. We rarely experience discipline problems, but when we do we ask students to either change their behavior or take a break from the activity until they are ready to participate properly. Our goal is to work as a team with you, so please feel free to communicate with us about any issues that you foresee.