



### ***Practical and Hands-on Behavioral Psychology in the Self-Contained Classroom***

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This curriculum unit is recommended for:

Teachers of high school self-contained Special Education classes and for teachers of general education high school psychology classes in order to provide laboratory experience.

**Keywords:** Scientific Method, Informed Consent, Psychology, Behavioral Psychology, Social Psychology, Cognitive Psychology, Stimulus, Response, Behavior, Unconditioned Stimulus, Unconditioned Response, Conditioned Stimulus, Conditioned Response, Operant Conditioning, Positive Reinforcement, Negative Reinforcement, Positive Punishment, Negative Punishment, Extinction, Differential Reinforcement, Applied Behavioral Analysis, Social Learning Theory, Social Learning

**Teaching Standards:** See [Appendix 1](#) for teaching standards addressed in this unit.

**Synopsis:** The focus of this unit is on behavioral psychology and creating hands on experiences for students with and without intellectual disabilities. This unit will provide a completed adapted chapter with picture symbols, adapted text, hands on experiences, adapted worksheets, and adapted assessment activities. The unit will begin with a brief summary and definitions of behavior, stimulus, psychology, and behaviorism. The students will have an opportunity to collect data on different stimuli during an activity. The unit will then provide information, videos, and hands on activities involving Classical Conditioning, Operant Conditioning, and Observational Learning. The students will also be provided with information about important research and the practitioners who helped to develop the major concepts and knowledge base of behavioral psychology. At the end of each section, the students will have the ability to demonstrate their learning by conducting hands on conditioning experiments. The students will be assessed using vignettes that will require students to apply their knowledge and understanding of the major concepts of behavioral psychology.

*I plan to teach this unit during the coming year to 20 students in grades 9-12.*

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# Practical and Hands-on Behavioral Psychology in the Self-Contained Classroom

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## **Introduction**

Individuals with disabilities are educated in a variety of settings in public schools. In order to receive special education services, the student must have a condition that is defined as a disability by the Individuals with Disabilities in Education Act 2004 (IDEA), the disability must have an adverse effect on educational performance, and, as a result, the student requires specially designed instruction in order to access the general education curriculum. Once students meet all three criteria, they are given an Individualized Education Program (IEP) that is used to create goals and objectives along with other supports to help the student access the general education curriculum. Students with IEPs must have them addressed annually and adjusted as progress is or isn't made. IEPs ideally involve parental input and have resulted in positive outcomes when student needs are addressed (Lindley et al. 2015). Most students with disabilities are educated using the inclusion model. The inclusion model of education has given many students with disabilities the opportunity to receive instruction along with their same age peers without disabilities. This movement has allowed students and individuals with disabilities to become more integrated into the school environment at large. Inclusion is most prevalent among students with higher incidence, or less severe, disabilities (learning disabilities, some Autism) than it is for students with lower incidence, or more severe, disabilities (students with intellectual disabilities) (Spooner and Browder 2003, Browder et al. 2007).

Much of the change in how individuals with disabilities have received instruction is based on the requirements of IDEA 2004. IDEA 2004, much like its predecessors, requires that students with disabilities be provided with a Free and Appropriate Education (FAPE) in the Least Restrictive Environment (LRE). LRE refers to the amount of school time students with disabilities spend with peers without disabilities. The more time in a general education setting, the less restrictive the environment. Students with higher incidence disabilities are typically provided with fewer supports and less service time than students with lower incidence disabilities. Many students with high incidence disabilities are able to progress on the general curriculum and are able to take honors and Advanced Placement classes.

In contrast to students with high incidence disabilities, students with intellectual disabilities are typically served in classrooms where they are removed from their peers without disabilities for the majority of their school day. Students with mild to moderate intellectual disabilities are typically served in separate classrooms. A mild intellectual disability is defined as having an IQ two or more standard deviations below the mean of 100 (50-70) and deficits in adaptive behavior. A moderate intellectual disability is defined as having an IQ three standard deviations below the mean of 100 (35-49) and deficits in adaptive behavior. Students served in the separate classrooms have significant delays in cognitive processing as compared to their peers without

disabilities. According to Browder et al. (2007), prior to the implementation of No Child Left Behind (NCLB) and IDEA 2004, many students with significant disabilities were not exposed to academic content. Students were typically taught functional tasks and were not expected to take end of grade assessments. However, after the passage of IDEA and NCLB, districts were held accountable for student performance (Browder et al. 2007). The change in law also led to an increase of research based strategies for instructing students with intellectual disabilities. The majority of research on the academic development and skill acquisition of students with intellectual disabilities is through single subject design experiments using Applied Behavior Analysis, behavior shaping, chaining, and systematic instruction, which involves the use of task analyses (Browder et al. 2007, Spooner and Browder 2003).

Following the requirements of the new laws, students with intellectual disabilities were expected to be exposed to and make progress on academic content. Students who receive instruction on academic content and standards have improved independence, demonstrate increases in self-determination, and an improved ability to make choices (Browder et al. 2007, Evmenova and Behrmann 2011). However, students with intellectual disabilities have difficulties with accessing plain text information, writing information, reading, information recall, fluency, and generalization. In order to access grade level material, the students must receive information that has been adapted. Adaptations can be created in a variety of ways. The most popular research based methods are adapted text using picture symbols, use of videos, use of the prompt hierarchy and errorless learning, and development of materials using the Universal Design for Learning. These adaptations can be used in isolation, but they are more commonly used in combination in order to get the best outcomes and student responses. These adaptations also operate on the idea of developing stimulus discrimination and shaping behavior; which is typical in the use of applied behavior psychology strategies.

## Rationale

The purpose of the unit is to expand the educational opportunities for students with intellectual disabilities. Students with intellectual disabilities have limited options for academic programming. Science instruction in the self-contained classroom is largely limited to brief lessons about safety, different animals, brief discussions of illness, and health. This unit will provide students with the opportunity to learn and apply information that is also taught to their same age peers without disabilities. Throughout the unit, students will learn about the different iterations of Behavioral Psychology, from the early behaviorism of John Watson to the Social Learning Theory of Albert Bandura. The students will receive literacy instruction with adapted text about the different theories and vocabulary. The students will have the opportunity to apply the vocabulary to different video presentations and to design hands on experiments using field experiments, different classroom animals, and each other. The students will learn about informed consent and ethics in testing (the John Watson's little Albert experiment as an example). The unit will also promote the inclusion of special education students and general education psychology students in the design of experiments. The general education students will learn to work with students with disabilities and will learn to design their own experiments using psychological concepts.

The science curriculum for students with intellectual disabilities is very broad and general. Prior to 2008, the Extensions Program of Charlotte Mecklenburg School System's EC Department did not have a standard curriculum or materials for teachers to use in the classroom. Many teachers were provided with age appropriate teaching materials, such as 2<sup>nd</sup> grade science. Beginning in 2007, teachers were required to teach students grade appropriate science that would prepare students to access the North Carolina alternate assessment for 10<sup>th</sup> graders called the Extend 1. However, the school district did not have materials for teachers so they would be able to teach at grade level. Many teachers began to adapt grade appropriate textbooks in order to provide instruction; however, the teacher made curriculum varied in complexity and depth. In 2008, the system adopted Attainment's *Teaching to Standards: Science* by Ginevra Courtade as the science curriculum. The book was based on the current research in teaching students with intellectual disabilities and provided picture symbols, choice cards, instructions for use with the prompt hierarchy and the use of systematic instruction when teaching lessons (Courtade 2008). The book covered topics on earth science, plants, cells, and the water cycle. The content of the book was intended for students in middle and high school. Although the book provided grade appropriate instruction for students in middle school, it barely covered the information necessary to instruct high school students. The book did not have information about different animals, food chains, pollution, etc. Therefore, many high school teachers were required to develop content using available high school science texts. Another shortcoming of *Teaching to Standards: Science*, is the depth of information presented. Each of the chapters presented a survey of the topics and did not require much complexity of thought in terms of vocabulary, information presented, assessments, and hands on activities. Recently, the CMS EC has shifted its curriculum focus to creating lessons for students who are in the transition program. This shift in focus and the age of the 2008 adoption create an opportunity for the development of a new unit that will stimulate and challenge students in the separate classroom.

The unit was influenced by the labs visits and the discussions with the seminar leader following the visits during the Doing Science Seminar. The discussions following each lab visit influenced the idea to have students in AP Psychology work as lab leaders with students with disabilities in an inclusive setting. This would provide the students in the self-contained classroom an opportunity to participate in an inclusive, student directed academic activity. This activity would provide the students without disabilities the opportunity to learn how to work with individuals of differing ability levels.

### School Setting

William A. Hough High School is a large suburban high school in Cornelius, North Carolina. Hough is a comprehensive high school that offers a variety of educational opportunities. Hough offers 26 Advanced Placement classes, an Exceptional Children's Program, an English Language Learner program, a Junior ROTC program, a Visual Arts and Fine Arts program, and a variety of Career and Technical Education (CTE) courses. Hough is becoming more culturally diverse as the communities it serves continue to grow. The school had a total enrollment of 2,719 students during the 2016-2017 school year. The student body is 74% White, 9% African American, 11% Hispanic, 3% Asian, and 3% other nationalities. Eighteen percent of Hough students receive free and reduced lunch. Hough's student body also has positive post-secondary outcomes with 83.8% of Hough graduates attending either four year or 2 year institutions and 16.2% of graduates joining the military or the workforce.

I teach in a program for students with mild to moderate intellectual disabilities. The students can also have concomitant Autism or physical disabilities. The four classrooms for students in my program are called the Extensions Program (EP). The program has 37 students. All students are educated on the Extensions of the Common Core course of study. The Extended content standards are derived from the standard course of study, but are adapted to address only the basic ideas and concepts presented in the standard course of study. For example, students on the standard course of study are expected to analyze sources of energy for organisms and to analyze different adaptations. Students on the extensions are only expected to identify very concrete examples of energy and animal relationships. Students on the extensions are not expected to develop a deeper understanding of the curriculum. However, teachers of the extensions are given significant leeway in how to design lessons and to vary the complexity of the content presented to the students.

The four classrooms are divided by grade band. The students in the 9-12 grade band are in the high school program. Once the students turn 19, they are placed in the transitions program, which seeks to prepare students for life after high school. Each of the teachers has a homeroom that meets daily. My homeroom of eight students completes writing or typing a daily schedule, a daily journal entry, and collects weather data. Prior to beginning science, my homeroom completes a daily KWL/Scientific Method activity where data collected during the day is recorded and compared to the hypotheses from the previous day and from student homework. Following homeroom, I teach the 17 students in the 9-12 grade band science and social studies. My science units are focused on the features of organisms, application of the features of organisms to real life examples and videos, the study of taxonomy, evolution, and the different chordates. My social studies lessons are focused on citizenship and the Constitution. All of the Extension Program teachers teach different applied vocational activities in order to give the students a survey of skills required to complete different jobs (packaging, clerical, custodial, etc.).

## **Background**

### **My Science Class**

I do not use the 2008 district textbook in my classroom. I have created an adapted textbook covering the features of organisms, taxonomy, and the different chordates. I have made different assessments and worksheet activities that involve application and analysis level student responses. I use a wide variety of YouTube videos, pictures, preserved specimens, and word cards to supplement and extend the content. I am not interested in the speed with which I move through the different topics. I prefer to work on depth of understanding and helping students to discover connections between the different organisms discussed. I also use models and specimens to demonstrate the similarities between humans and different animals. My lessons will usually last one month or more with time for review and continual assessment. I have also started to embed information about the connection between different stimuli and responses into the lessons. My classes are also given brief lessons in the scientific method. I use the scientific method to teach my students how to observe and predict in a daily meteorology lesson. I use picture cards, a graphic organizer on the interactive whiteboard, and weather information to provide daily instruction on scientific thought and how to answer questions. A great resource to teach the scientific method is on the Scientific Method video on the Brain Pop website

<https://www.brainpop.com/science/scientificinquiry/scientificmethod/>). The video provides a humorous description of the steps of the scientific method using appropriate vocabulary. The video also provides a simple experiment that can be conducted in the classroom.

There is a need to expand the science education of students with disabilities. I have constantly updated and expanded my adapted books and lessons. I would like to expand the lessons on behavior and teach a lesson that covers both science and social studies.

#### New Unit

Behavioral Psychology provides a method of assessing the responses of humans and animals in different situations and in the presence of different stimuli. It also provides more information in order to compare and contrast humans and different animals based on responses to stimuli and how behavior is changed. Behavioral Psychology also promotes laboratory studies and research in order to verify the effectiveness of different stimuli in affecting behavior change. Understanding the effect of different stimuli and different situations will also provide an opportunity to help the students understand their own behavior and how to manage and change behavior. The unit will take a month or two to teach.

#### Prerequisites

Prior to instructing the unit on Behavioral Psychology, teachers should instruct students on the anatomy of the brain; specifically the function of neurons. Teachers should also teach the different types of stimulation and the body's mechanisms for processing and storing the information. For example, students should understand that visual stimulation is processed by the eyes and stored in the occipital lobe. The students should also learn about the importance of the folds of the brain (gyri and sulci) in information processing and neural transmissions. This information will assist in understanding why animals respond to different stimuli and why the behavior of an animal may or may not change. Two sources to aid in the instruction of the information are from Brain Pop, <https://www.brainpop.com/health/bodysystems/brain/>, and Live Science, <https://www.livescience.com/29365-human-brain.html>.

#### Unit

The instructional unit will involve different lessons on the different areas of Behavioral Psychology. Lesson one will address Pavlov's Classical Conditioning and the development of modern behaviorism by John Watson. Lesson two will focus on the work of B.F. Skinner and the development of Operant Conditioning. Lesson three will address the foundation of Cognitive-Behavioral Psychology with the Social Learning Theory.

Lesson one will discuss the development of Behavioral Psychology to the work of physiologist Ivan Pavlov. The students will learn about Classical Conditioning. The lesson will involve the use of videos, adapted text and hands on examples, where students will learn to condition a response in a fellow student. Lesson one will also involve a discussion of the development of modern behaviorism by John Watson. This lesson will have the students learn how Watson's stimulus-response behaviorism was influenced by Classical Conditioning. The students will also learn about Little Albert and discuss ethics in human experimentation. The

students will also learn about the divide in the different disciplines of Psychology and how Watson viewed cognition. His ideas on cognition and the central role of behavior as the sole focus of scientific study would influence behavioral thought up to the work of Albert Bandura.

Lesson two will focus on the work of Edward Thorndike, B.F. Skinner and Operant Conditioning. Students will compare and contrast the role of the subject in Respondent Conditioning and Operant Conditioning. The students will also learn the limits of behaviorism with the discussion of the Language Acquisition Theory. The students will perform experiments on other students in order to learn about positive reinforcement, negative reinforcement, positive punishment, negative punishment, and extinction. This lesson will include information on Applied Behavior Analysis ABA and how it is used to promote behavior change in students. Students from the AP Psychology classes will help design learning experiments using previous research and will learn about generalization of results and replication of results. For a future activity, AP students would learn to design their own experiments.

Lesson three will focus on the Social Learning Theory of Albert Bandura and the introduction of cognitive processing to the study of behavior. Researchers have improved their understanding of the effect of different stimuli on cognitive processing (Schutte et al. 2017, Hayes et al. 2014). Social Learning continues to receive a great deal of scientific attention (Heaney et al. 2017, Reader and Biro 2010). Students will watch videos on the bobo doll experiment and will design experiments to carry out on other students.

### **Teaching Strategies**

Picture symbols (see Figure 1) involve combining a picture with a word to provide context cues in text. The symbols can be either abstract drawings or concrete pictures. They can also be presented in isolation or as a part of a whole narrative. Picture symbols can help improve independent reading and comprehension in students with intellectual disabilities (Evmenova and Behrmann 2011). When text is supplemented by picture symbols, students are able to point to the picture and word combination. The association helps to promote retention, especially following repeated trials learning and repetition of the content. Evmenova and Behrmann (2011) also discussed the use of videos in instruction. When coupled with picture symbol text, closed captioning, and frequent checks for understanding, videos help to provide concrete examples to abstract and difficult topics. For example, during a discussion on the differences of natural and artificial selection, the concepts of natural and artificial can be coupled with a picture symbol of the word habitat and farmer respectively. The video can be used to show how changes in habitat have changed animals and how farmers have influenced the development of different foods and animals through breeding. A comprehension activity involving the video would be frequent trials given a choice of the farmer and habitat cards and tracking responses to how particular organisms were changed over time.

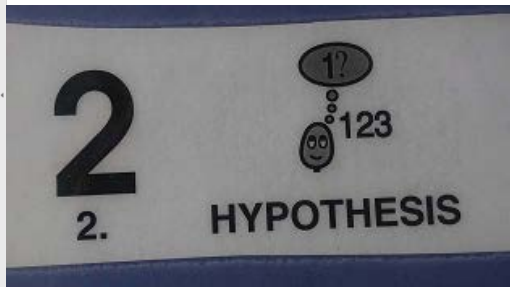
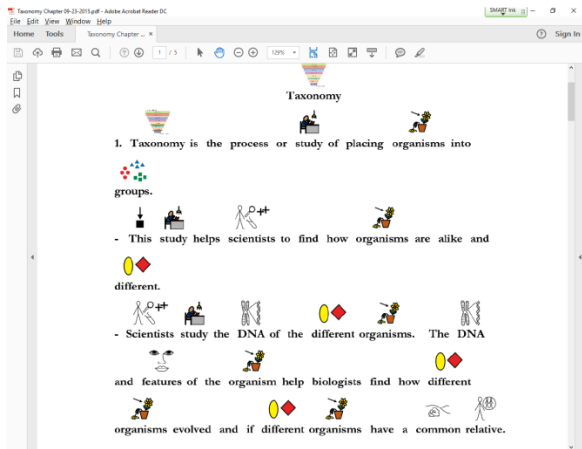


Figure 1.

The prompt hierarchy (see figure 2) is a continuum that is used to indicate the level of support required by a student when presented with academic materials and activities. The levels of the prompt hierarchy are, from least intrusive prompting to most intrusive prompting, independent, gestural, verbal, visual/picture, modeling, partial physical, and full physical. Errorless learning is teaching the correct response over the incorrect during trials. Prompting is used to make sure the student focuses on the correct response and not the incorrect in order to promote generalization and fluency. Independent means that the student is able to access the academic material or activity without supports from the teacher. Independence is different for different students based on ability level. For example, one student may be able to complete a worksheet by writing the answers, another student may be able to complete the activity with a worksheet with picture symbol answer choices, and another student may be able to answer the same questions with the answer choices presented in an array and the worksheet items one at a time. Gestural prompting involves the use of pointing to the choices after the instruction is given and the student has not responded or has responded incorrectly. Verbal prompting involves the use of a sound, word, or phrase to prompt correct responding by the student. Verbal prompts can be non-specific, using only a small sound, or specific, using a whole word or phrase. Picture/visual prompt involves the use of a picture symbol in isolation in order to prompt the correct response following an instruction. Modeling prompts involve the teacher or peer modeling the correct response following an instruction or question. Physical prompts are used when the student is unable to complete the correct response following use of all other prompts. Best practice with the prompt hierarchy is to expect independent responding and to move down from least intrusive prompts to most intrusive prompts until the student is able to perform the correct response. The goal with prompts is to fade the use until the student is able to respond independently.

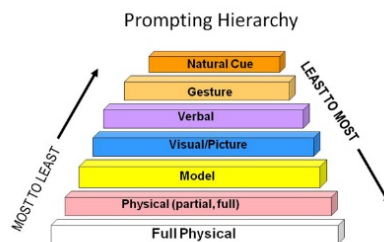


Figure 2 (M.A.S.T.)



The students are also provided information and academic materials based on their ability to read and understand symbolic representation of information. The levels are Readers/Level 3, Level 2, and Level 1. Students who are classified as Readers/Level 3 are able to read some words and are able to access information presented in either plain text or using more abstract symbols. These students are able to write or read with more independence than students classified as either Level 2 or Level 1. Students classified as Level 2 are beginning to associate abstract symbols or letters/words with concepts or words. However, these students require more concrete images to help them grasp concepts without error. For example a students may need a picture or drawing of a ball to represent the word ball. Students classified as Level 1 are just beginning to associate words and information with objects. These students require actual objects or concrete representations of concepts in order to demonstrate comprehension. Many students in self-contained classrooms are unable to speak (are non-verbal). These students are provided with Augmented and Alternative Communication (AAC) devices such as a “cheap talk”, a Big Mack, etc. These devices allow an instructor to record vocabulary or requests. The student can then push the button in order to play the word or request in order to participate in class verbally.

Universal Design for Learning (UDL) is a classroom practice based on architectural principles (the curb cut, handicap access, etc.). The goal is to create lessons or materials that provide access for the most students and making the classroom accessible to all learners (Curry et al. 2006). UDL combines all of the teaching strategies, especially the use of videos and picture symbols. Picture symbols are usually paired with words. Therefore, the students who are able to read plain text can access the material and use the pictures for context cues to help them define the word. The pictures will also allow the student who is unable to read to access the academic content. UDL also involves the use of technology to present information and to create communication adaptations (Curry et al. 2006). Many of the classrooms for students with intellectual disabilities in Charlotte Mecklenburg Schools come equipped with interactive whiteboards. This allows for all students to be able to see the information, control videos, complete adapted writing activities, and to make presentations. UDL promotes inclusion in the classroom by making the content accessible to all students.

All of these strategies are common practice in the self-contained classroom. There is a wide variation in ability level among students; however, all can benefit from use of the best practice methodology. Some students in self-contained classes are able to read and write. Simple picture symbols promote independence by allowing them to use the picture to determine meaning. Other students, who are unable to read, can use the picture symbols to make choices. All of the students benefit from the use of the prompt hierarchy to learn correct responses and to increase independence in responding to learned and novel stimuli.

## **Learning Experiences**

Lesson 1: Classical Conditioning: Pavlov and Watson

Objective:

1. Given AAC devices and adapted text, the students will read the adapted information on the Psychological discipline of Behaviorism.

- a. Given adapted information on different disciplines of psychology, the students will compare and contrast cognitive science to behaviorism (observable, based on environmental influence) by choosing the correct vocabulary word either presented as a choice card (see appendix 2 for information on how to make choice cards) or in text that describes observable behavior (blinking, eating, running, etc.).
  - b. Given information on stimulus and response and adapted word cards with different definitions, the students will demonstrate comprehension of the definitions of stimulus (auditory, visual, gustatory, olfactory, and tactile) and behavior when presented with a choice of three word cards.
  - c. Given different videos (See appendix 2), information on evolution, and evolution word cards and questions, the students will analyze how behaviors help organisms adapt to their ecosystems and habitats.
  - d. Given an informed consent sheet to take home, the students will review the rules of psychology experiments and take home for a parent signature.
2. Given AAC Devices, adapted text, and videos on the Smartboard, the students will learn about the work of Pavlov and his contributions to the development of behavioral psychology (See adapted text in appendix 2).
    - a. Given definitions of psychology and physiology, the students will compare and contrast the disciplines (for definitions, see adapted text in appendix 2).
    - b. Given information on unconditioned stimulus, unconditioned response, conditioned stimulus, and conditioned response, the students will compare and contrast various examples and will find examples of conditioned stimuli in their lives (alarms, microwaves, toasters, etc.)-Definitions appear in adapted text (see appendix 2)
    - c. Given adapted information on ethics in laboratory testing, the students will learn about appropriate use of animals in research.
  3. Given AAC Devices, adapted text, and videos on the Smartboard, the students will learn about the John Watson's Little Albert Experiment.
    - a. Given the results of the experiment, the students will determine whether or not the learning or associations generalized to different stimuli.
    - b. Given adapted information on ethics in laboratory testing, the students will learn about appropriate use of human subjects in research.
    - c. Given different videos of human testing, the students will determine whether or not the experiments were conducted in an ethical manner.
  4. Given a Brain Pop video, You Tube videos, Discovery Education Videos and note taking sheets (both adapted and cloze-fill in the blank), the students will analyze the videos on animal behavior in the wild and will determine the stimuli and the response (see appendix 2).
  5. Given various sources of stimulation and placed into small groups, the students will explore the various sounds (knocks, animals, thunder), visuals (word cards, pictures, colors), odors (bleach, popcorn, flowers), tastes (salty, sweet, sour), and textures (rough, or soft).
  6. The students will answer the following questions in groups:
    - a. How does stimulus affect behavior?
    - b. How do you think the work of Ivan Pavlov influenced psychology?

c. How could Pavlov's experiments be conducted more ethically?

Readers/Level 3:

- The students will identify/apply new vocabulary, such as psychology, behaviorism, stimulus, response, behavior, classical conditioning, unconditioned stimulus, unconditioned response, conditioned stimulus, conditioned response, ethics, and informed consent, and contingency independently given a choice of four response options as choice cards (see appendix 2 for adapted text).
- The students will analyze how organisms and humans respond to different stimuli in their environments.
- The students will complete a cloze (fill in the blank) worksheet (see appendix 2) analyzing the simple behavioral contingencies in videos.
- The students will be able to compare and contrast different behavioral contingencies using videos involving humans and other organisms.
- Given vignettes, the students will apply vocabulary to describe the stimulus response relationship in the short story.

Level 2:

- The students will do the same activities as above with more intrusive prompting for errorless learning.
- The students will listen to and read the text using AAC devices.
- The students will complete a response option worksheet or cloze worksheet with key words determining the behavioral contingencies observed in videos with more intrusive prompting as needed.
- Students will attempt to say the vocabulary word(s) and point to the word on the definition sheet.
- Students who have difficulty speaking will press the "Big Mack" to hear the word and will point to the correct vocabulary word on the definition sheet or on the word card given a choice of three response options.

Level 1:

- The students will do the same activities as above with more intrusive prompting for errorless learning.
- The students will listen to and read the text using AAC devices.
- The students will complete a response option worksheet that has been turned into discrete response choices in order to determine the behavioral contingencies observed when given more intrusive prompting as needed.
- Students will point to the vocabulary word on the definition sheet or on the word card given a choice of three response options and more intrusive prompting as needed

Links to Prior Learning:

Prior to warm-up, the students will review the steps of the scientific method and sequence the order of inquiry. The students will also identify the steps of the order of science and the relationship to the method.

### Lesson Procedures: (What the teacher will do)

- Assistants: will work with a small group of students to help them to respond to questions and focus on the textbooks. They will monitor behavior and take data. They will also assist with the use of AAC devices. They will provide data on the level of support provided to the students.

### Readers/Level 3:

- The teacher will provide the adapted textbooks and word card choices.
- The teacher will then read the vocabulary with the students to prepare them for the reading.
- The teacher will read the adapted food chain text with the students
- The teacher will have the students follow along with the text. The Smart Board will display the adapted text to help the students follow along.
- The teacher will identify the new vocabulary for the Velcro Word wall (psychology, behaviorism, stimulus, response, behavior, classical conditioning, unconditioned stimulus, unconditioned response, conditioned stimulus, conditioned response, ethics, and informed consent, and contingency).

### Level 2:

- The teacher will do the same as above.
- The teacher will handout three vocabulary words
- The teacher will read the three vocabulary words and have the students along.
- The teacher will have the students point to the different vocabulary words and use augmentative communication devices if non-verbal.
- The students will point to pictures in the book.

### Level 1:

- The teacher will do the same as above.
- The teacher will have the students listen to the text.
- The teacher will have the students to eye-gaze or point to the correct vocabulary word out of a choice of three.

### Independent Practice:

- Given different vignettes on classical conditioning, the students will complete a worksheet where they differentiate the conditioned from the unconditioned stimulus and describe the response. The students will receive immediate praise after selecting a correct response and immediate correction and feedback following incorrect responses. Students, who respond incorrectly, will be provided with an opportunity to provide a correct response
- Given a puzzle, matching task, or writing task and placed into pairs, one student will complete a task and the other will tell the student to stop. The partner who says the command will pair the command with a bell. The student will record the number of trials until the partner completing the task will stop the task for the bell only. (See appendix 2 for the data sheet and for the adapted procedures).

## Lesson 2: Operant Conditioning

### Objective:

1. Given AAC devices, adapted text, and videos on the Smartboard the students will read the adapted information on B.F. Skinner's principles of Behaviorism (see adapted text provided in appendix 2).
  - a. Given adapted information on different disciplines of psychology, the students will compare and contrast Skinner's Operant Conditioning to Watson's Respondent Conditioning using examples from the adapted text and videos provided in text (see appendix 2).
  - b. Given information on operant conditioning and adapted word card choices with different definitions, the students will demonstrate comprehension of the definitions of stimulus and behavior when presented with a choice of three (definitions provided in the adapted text. See appendix 2).
  - c. Given different videos on operant behavioral experiments involving human and animal subjects, the students will identify the components of the operant conditioning contingencies.
  - d. Given information on Applied Behavior Analysis, the students will learn how the principles of operant conditioning have been used to teach skills to students with disabilities.
2. Given AAC Devices, adapted text, and videos on the Smartboard, the students will learn about the Law of Effect by Edward Thorndike and its influence on the development of Operant Conditioning.
  - a. Given information on the Law of Effect and Respondent Conditioning, the students will compare and contrast when the presentation of stimulus occurs in the contingencies by making choices using vocabulary cards and examples in text (see appendix 2).
  - b. Given videos and information on both types of learning, students will determine which contingency supports permanence in learning. Videos are provided in text (see appendix 2).
  - c. The students will determine the effect of the consequences on the behavior of the subject.
3. Given various operant contingencies (information presented adapted text in appendix 2), the students will determine how learning occurred.
4. Given You Tube videos and Discovery Education Videos and note taking sheets (see appendix 2) the students will analyze videos involving both human and animal operant behavioral experiments in the lab and will determine the contingencies.
  - a. Given the learned response, the students will determine whether the behavior would be likely to generalize into a non-laboratory setting.
5. Given various animal experiments, the students will determine if the experiments are applicable to the study of human behavior.
6. The students will answer the following questions in groups:
  - a. How is operant conditioning different from respondent conditioning?
  - b. How is the change in the presentation of the stimulus important?
  - c. How can operant learning be generalized?

### Readers/Level 3:

- The students will identify/apply new vocabulary, such as operant conditioning, Applied Behavior Analysis, positive reinforcement, negative reinforcement, positive punishment, negative punishment, chaining, shaping, extinction, Law of Effect independently given a choice of four response option choice cards (see appendix 2).
- The students will analyze how different reinforcing and punishing stimuli affect human behavior in their environments.
- The students will compare and contrast the role of the subject in both operant and respondent conditioning.
- The students will complete a cloze worksheet analyzing the operant behavioral contingencies in videos.
- Given simple experiments, the students will teach a task to their classmates.

### Level 2:

- The students will do the same activities as above with more intrusive prompting for errorless learning.
- The students will listen to and read the text using AAC devices.
- The students will complete a response option worksheet or cloze worksheet with key words determining the operant contingencies observed in videos with more intrusive prompting as needed.
- Students will attempt to say the vocabulary word(s) and point to the word on the definition sheet.
- Students who have difficulty speaking will press the “Big Mack” to hear the word and will point to the correct vocabulary word on the definition sheet or on the word card given a choice of three response options.

### Level 1:

- The students will do the same activities as above with more intrusive prompting for errorless learning.
- The students will listen to and read the text using AAC devices.
- The students will complete a response option worksheet that has been turned into discrete response choices in order to determine the operant contingencies observed when given more intrusive prompting as needed.
- Students will point to the vocabulary word on the definition sheet or on the word card given a choice of three response options and more intrusive prompting as needed.

### Links to Prior Learning

Prior to warm-up, the students will review the steps of the scientific method and sequence the order of inquiry. The students will also identify the steps of the order of science and the relationship to the method.

#### Warm-up 1

- a. Given review information on Pavlov’s experiments, the students will review the nature of the experiments and will determine the permanence of the learning.

- b. Given different Respondent Contingencies, the students will identify the unconditioned stimulus and conditioned stimulus.

*Level 3* students will complete the activity either independently or with verbal prompts.

*Level 2* students will complete the activity with verbal/gestural prompts

*Level 1* students will complete the activity with gestural/physical prompting.

Lesson Procedures: (What the teacher will do)

- Assistants: will work with a small group of students to help them to respond to questions and focus on the textbooks. They will monitor behavior and take data. They will also assist with the use of AAC devices. They will provide data on the level of support provided to the students.

Readers/Level 3:

- The teacher will provide the adapted textbooks and word card choices.
- The teacher will then read the vocabulary with the students to prepare them for the reading.
- The teacher will read the adapted food chain text with the students
- The teacher will have the students follow along with the text. The Smart Board will display the adapted text to help the students follow along.
- The teacher will identify the new vocabulary for the Velcro Word wall (operant conditioning, positive reinforcement, negative reinforcement, positive punishment, negative punishment, chaining, shaping, extinction, Law of Effect)-see appendix 2.

Level 2:

- The teacher will do the same as above.
- The teacher will handout three vocabulary words
- The teacher will read the three vocabulary words and have the students along.
- The teacher will have the students point to the different vocabulary words and use augmentative communication devices if non-verbal.
- The students will point to pictures in the book.

Level 1:

- The teacher will do the same as above.
- The teacher will have the students listen to the text.
- The teacher will have the students to eye-gaze or point to the correct vocabulary word out of a choice of three.

Independent Practice:

- Given different vignettes on operant conditioning, the students will complete a worksheet where they will determine the consequence stimuli and determine if the behavior of the subject will become more or less likely. The students will receive immediate praise after selecting a correct response and immediate correction and feedback following incorrect responses. Students, who respond incorrectly, will be provided with an opportunity to provide a correct response
- Given puzzle task or a matching task, preferred reinforcers, and a data sheet, student experimenters will train the student subjects using shaping to teach students how to

complete a puzzle or matching activity. The students will provide reinforcement for each step. The students will take data on the effectiveness of the reinforcers and the duration of the response. The students will determine if the learning will attain permanence or will generalize to different settings. See appendix 2 for data sheets and adapted procedures.

### Lesson 3: Social Learning Theory

#### Objective:

1. Given AAC devices, adapted text, and videos on the Smartboard the students will read the adapted information on Albert Bandura's theory of social learning (adapted text provided in appendix 2).
  - a. Given adapted information on different disciplines of psychology, the students will compare and contrast Bandura's Social Learning to Skinner's Operant Conditioning and Watson's Respondent Conditioning.
  - b. Given information on cognition and behavior, the students will compare the ideas of Watson and Skinner on cognition to the ideas of Albert Bandura.
  - c. Given information on Social Learning and adapted word cards with different definitions, the students will demonstrate comprehension of the definitions of stimulus and behavior when presented with a choice of three.
  - d. Given different videos on social learning experiments involving human and animal subjects, the students will identify the contingencies involved in social learning.
2. Given You Tube videos, Discovery Education Videos and note taking sheets (see appendix 2), the students will analyze videos involving both human and animal social learning experiments in the lab and will determine the contingencies.
  - a. Given adapted text and videos on the Bobo doll experiment, the students will analyze how contingencies observed on video influenced the behavior of the observers.
    - i. The students will describe the behavior and the consequences affecting the behavior.
  - b. Given the learned response, the students will determine whether the behavior would be likely to generalize into a non-laboratory setting.
  - c. Given a worksheet and placed into teams, the students will design a contingency to maintain the learned behavior in the natural setting.
3. Given various animal experiments presented in videos (see appendix 2), the students will determine if the experiments are applicable to the study of human behavior.
4. The students will answer the following questions in groups:
  - a. How does social learning involve cognition?
  - b. How is social learning an extension of conditioning?
  - c. How can social learning be generalized?

#### Readers/Level 3:

- The students will identify/apply new vocabulary, such as social learning, cognition, and observational learning (vocabulary in appendix 2), independently given a choice of four response options.



- The students will analyze how observational learning affects human behavior in their environments without directly experiencing the contingency.
- The students will compare and contrast the role of the subject in social learning, operant and respondent conditioning.
- The students will complete a cloze worksheet analyzing the behavioral contingencies observed then performed by subjects in videos presented in class.
- Given simple experiments and a video presentation, the students will teach a task to their classmates.

#### Level 2:

- The students will do the same activities as above with more intrusive prompting for errorless learning.
- The students will listen to and read the text using AAC devices.
- The students will complete a response option worksheet or cloze worksheet with key words determining the contingencies observed by experimental subjects and whether the subject was able to perform the task in videos presented with more intrusive prompting as needed.
- Students will attempt to say the vocabulary word(s) and point to the word on the definition sheet.
- Students who have difficulty speaking will press the “Big Mack” to hear the word and will point to the correct vocabulary word on the definition sheet or on the word card given a choice of three response options.

#### Level 1:

- The students will do the same activities as above with more intrusive prompting for errorless learning.
- The students will listen to and read the text using AAC devices.
- The students will complete a response option worksheet that has been turned into discrete response choices in order to determine the contingencies observed by experimental subjects and whether the subject was able to perform the task in presented videos when given more intrusive prompting as needed.
- Students will point to the vocabulary word on the definition sheet or on the word card given a choice of three response options and more intrusive prompting as needed.

#### Links to Prior Learning:

Prior to warm-up, the students will review the steps of the scientific method and sequence the order of inquiry. The students will also identify the steps of the order of science and the relationship to the method.

#### Warm-up:

- d. Given review information on Pavlov’s experiments, the students will review the nature of the experiments and will determine the permanence of the learning.
- e. Given different Respondent Contingencies, the students will identify the unconditioned stimulus and conditioned stimulus.
- f. Given vignettes with different operant contingencies, the students will determine the type of stimuli and the effect on the behavior.

*Level 3* students will complete the activity either independently or with verbal prompts.

*Level 2* students will complete the activity with verbal/gestural prompts

*Level 1* students will complete the activity with gestural/physical prompting.

Lesson Procedures: (What the teacher will do)

- **Assistants:** will work with a small group of students to help them to respond to questions and focus on the textbooks. They will monitor behavior and take data. They will also assist with the use of AAC devices. They will provide data on the level of support provided to the students.

Readers/Level 3:

- The teacher will provide the adapted textbooks and word card choices.
- The teacher will then read the vocabulary with the students to prepare them for the reading.
- The teacher will read the adapted food chain text with the students
- The teacher will have the students follow along with the text. The Smart Board will display the adapted text to help the students follow along.
- The teacher will identify the new vocabulary for the Velcro Word wall (social learning, cognition, and observational learning).

Level 2:

- The teacher will do the same as above.
- The teacher will handout three vocabulary words
- The teacher will read the three vocabulary words and have the students along.
- The teacher will have the students point to the different vocabulary words and use augmentative communication devices if non-verbal.
- The students will point to pictures in the book.

Level 1:

- The teacher will do the same as above.
- The teacher will have the students listen to the text.
- The teacher will have the students to eye-gaze or point to the correct vocabulary word out of a choice of three.

Independent Practice:

- Given different vignettes on social learning, the students will complete a worksheet where they will determine the consequence stimuli and determine if the behavior of the subject will become more or less likely. The students will determine the role of cognition in the learning. The students will receive immediate praise after selecting a correct response and immediate correction and feedback following incorrect responses. Students, who respond incorrectly, will be provided with an opportunity to provide a correct response
- Given puzzle task or a matching task, preferred reinforcers, and a data sheet, student experimenters will either model or record themselves completing the task. The student

experimenters will be reinforced for completing the activity. The test students will either watch the video of the students completing the activity or will observe the model. The students will take data on the effectiveness of the presentation and which presentation works better. See appendix 2 for data sheets and adapted procedures.

## Appendix 1: Implementing Teaching Standards for North Carolina Standard Course of Study

### Extended Essential Standards

#### High School Biology

EX. Bio.2.1 Understand the interdependence of living organisms within their environments.

Bio.2.1.2 Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations

#### 9-10 English Language Arts: Reading Standards for Literature

2. Determine the theme or central idea of the text and select details that relate to it; recount the text.

## Appendix 2: Adapted text, worksheets, and videos

The adapted text is divided into different chapters on behaviorism. Chapter 1 involves a discussion of behavior, the different types of stimuli, and definitions of psychology and behaviorism. Chapter two is about the work of Ivan Pavlov and John Watson and their work on Classical Conditioning. The chapter discusses Pavlov's dogs and Little Albert. Chapter 3 is about Operant Conditioning and the work of Edward Thorndike and B.F. Skinner. This chapter discusses Skinner boxes, operant contingencies, and operant schedules. Chapter 4 involves a discussion of Albert Bandura and Observational learning. This chapter touches on cognition in behavior and discusses the Bobo Doll Experiment.

All Adapted Materials: <http://zacharysanford.cmswiki.wikispaces.net/CTI+Psychology+Unit>

Adapted Chapter: <https://goo.gl/DVjZkT>

Each chapter ends with videos to help define the lessons. The login for the Brain Pop video is metrobp/brainpop. All CMS teachers have access to Discovery Education through <https://my.ncedcloug.org>.

The adapted text can be printed out and provided to students. To make word cards, print out the adapted text, cut out the highlighted vocabulary and paste or tape to index cards. These cards can be used for multiple choice checks for each student throughout the lesson.

Worksheets for videos:

Cloze: <https://goo.gl/imWYw9>

Choices: <https://goo.gl/KVB3nD>

Vignette tests

Classical Conditioning: <https://goo.gl/nqTkn2>

Operant Conditioning: <https://goo.gl/uf8wpm>

Observational Learning: <https://goo.gl/68PviC>

Experiments (The instructions for the experiments are located at the end of the unit.)

Stimulus Collection: <https://goo.gl/iCVD5q>

Data Collection Sheets:

Classical Conditioning Data Sheet:

<b>Trial</b>	<b>Stimulus</b>	<b>Response</b>
<b>1</b>		
<b>2</b>		
<b>3</b>		
<b>4</b>		
<b>5</b>		
<b>6</b>		
<b>7</b>		
<b>8</b>		

Operant Conditioning

<b>Steps</b>	<b>Reinforcer</b>	<b>Result</b>	<b>Time</b>
<b>Looks at Puzzle</b>			
<b>Picks up Piece 1</b>			
<b>Puts Piece 1 in Place</b>			
<b>Puts Piece 2 in place</b>			
<b>Puts Piece 3 in Place</b>			
<b>Puts Piece 4 in Place</b>			
<b>Puts Piece 5 in Place</b>			
<b>Completes the puzzle</b>			

Observational Learning

Condition	Number of steps to complete	Amount of time	Additional Reinforcement
Video-Puzzle			
Video-Matching			
Model- Puzzle			
Model- Matching			

### Appendix 3: Materials for lessons:

- Pictures and objects representing organisms
- KWL Chart
- Stimulus/response analysis worksheets
- Online articles (Wikipedia, National Geographic, A-Z Animals)
- Adapted Binders containing definitions and examples made with *Writing with Symbols 2000*
- Smart Board
- Smart Board projections of behaviorism and information on Stimulus, behavior, Psychology, Behaviorism, Ivan Pavlov, John Watson, Little Albert, B.F. Skinner, Edward Thorndike, and Albert Bandura.
- Big Mack and other AAC communication devices
- Velcro Board containing the characteristics of different disciplines of behaviorism (classical conditioning, operant conditioning, observational learning).



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