**Gina L. Gullo**

**Lesson Plan**

**1.** **Lesson** Molecule Game **Subject** Science **Date** 2/26/2014

**2. Target Grade/Age Level:** Grades K-2, Autistic Support

**3. PDE Standards:**

Reading, Writing, Speaking and Listening:

1.6.**K**.B. Speak clearly enough to be understood by all audiences using appropriate volume. Share stories, familiar experiences, and interests, employing gestures where appropriate

1.6.**1**.B. Use appropriate volume and clarity in individual or group situations. Deliver brief oral presentations on a topic supported by visual aids.

1.6.**K**.A. Listen and respond appropriately to others in small and large group situations.

1.6.**1**.A. Listen actively and respond to others in small and large group situations with appropriate questions and ideas.

1.8.**K**.A. Ask appropriate questions on a variety of topics.

1.8.**1**.A. Generate appropriate questions about a topic.

Science:

3.2.**K**.A1. Identify and classify objects by observable properties of matter. Compare different kinds of materials and discuss their uses.

3.2.**1**.A1. Observe and describe the properties of liquids and solids. Investigate what happens when solids are mixed with water and other liquids are mixed with water.

3.2.**1**.A4. Observe and describe what happens when substances are heated or cooled. Distinguish between changes that are reversible (melting, freezing) and not reversible (e.g. baking a cake, burning fuel).

Science as Inquiry:  
• Distinguish between scientific fact and opinion.

• Ask questions about objects, organisms, and events.

• Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known.

• Plan and conduct a simple investigation and understand that different questions require different kinds of investigations.

• Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information.

• Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge.

• Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

Student Interpersonal Skills:

16.2.**K**.A Interact with peers and adults in a socially acceptable manner.

16.2.**K**.C Engage in reciprocal communication with adults and peers.

**PA Common Core Standards:**

CC.1.5.**K**.E Speak audibly and express thoughts, feelings, and ideas clearly.

CC.1.5.**1.**E Produce complete sentences when appropriate to task and situation.

CC.1.5.**K-1**.G Demonstrate command of the conventions of standard English when speaking, based on kindergarten/Grade 1 level and content.

*Note: Grade levels for all standards are bolded.*

**4. Learning Objectives and Aligned Summative Assessments:**

*Note: The overall objective is the aim of this lesson; however, individual IEP objectives are included in this lesson as they can be worked on in ways that complement the content of this lesson.*

| **Overall Learning Objective** | **Aligned Summative Assessments** |
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| Given a one-on-one question, the student will respond to the question, “How does the inside of a solid move, a gas?” (slow, fast or show me…) with 100% accuracy. | Summative interview |

| **IEP Based Learning Objectives by Student** | **Aligned Summative Assessments** |
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| Pink:  During instructional time (i.e. work centers, deskwork, etc.), Pink will increase appropriate behaviors (task completion without incident) by reducing escape related behaviors in the form of saying, “I can’t do it,” flipping through her materials, staring at the instructor to direct attention away from the task, etc. from a current rate of approximately 6 per week to 1 or less per week. | Weekly Probes  Weekly Probes |
| Red:  Throughout the school day, and when an item/ activity is or is not present, Red will accurately request and item/activity (e.g. say, “skittle” instead of “green”) using a phrase consisting of 2 or more words for at least 10 different items/activities throughout the school week over 3 consecutive weekly probes. |
| Green:  During group instruction in either the regular education or special education classroom, Green will remain on topic while contributing to the discussion (e.g. he will not bring up his dog while the group is discussing the weather, etc.) for 10/10 opportunities presented over 3 consecutive weekly probes.  When asked about a past event, Green will accurately report about it by stating 3 (or more) details including when it occurred, for at least 4/5 past events over 3 consecutive weekly probes. |
| Blue:  Throughout the school day (task demand, transitions, preferred activities, etc.), Blue will continue to improve appropriate behaviors (i.e. squeezing head or hands) by decreasing the number of times he hits the sides of his head/bangs his head, from a current rate of 230 per week to 5 or less per week over 5 consecutive weekly probes.  During group instruction (e.g. Morning Opening/Circle), Blue will independently ask for a break or remove himself from the group quietly and calm down for 90% of opportunities present throughout the school week over 3 consecutive weekly probes. |
| Navy:  When participating in a group activity, or after he has completed an independent activity, and Navy wants to gain the attention of an adult, Navy will independently raise his hand to gain attention from an adult while remaining quiet (no talking or noises) for 80% of opportunities presented, over 3 consecutive weekly probes. |
| Purple:  When participating in a group activity, or after he has completed an independent activity, and Purple wants to gain the attention of an adult, Purple will independently raise his hand to gain attention from an adult while remaining quiet (no talking or noises) for 80% of opportunities presented, over 3 consecutive weekly probes. |
| Black:  During naturally occurring situations throughout the day and in the event that a peer is engaging in a behavior that Black does not approve of, Black will focus on his own appropriate behaviors and the appropriate behaviors of his other peers by remaining quiet and engaged in the instruction/activity for 9/10 weekly opportunities.  During instructional and non-instructional time, when Black is required to sit and/or wait quietly (i.e. morning opening, deskwork, centers, transitions, etc.), Black will sit quietly without making loud noises/calling out for 15 minutes or 9/10 weekly opportunities. |
| Yellow:  Throughout the day, Yellow will request items/activities she wants using a 2-word phrase (e.g. green skittle, doll please) for at least 10/10 items/activities.  During instructional time and when verbally given a 2-step direction (i.e. “walk to the door, knock 3 times”) , Yellow will follow the 2-step direction in the order it was given for 90% of all 2-step directions presented.  Throughout the entire day and when given a verbal direction and a visual prompt (e.g. picture, gesture) to transition, perform a task, etc. Yellow will follow each direction within 10 seconds with 100% accuracy of all directions given. |

**5. Materials Needed:**

* Open space
* Visual Cue cards

**6. Expectations for Behavior and Class Activities:**

* The child will follow teacher directions.
* The child will actively engage in all activities to her best ability.
* The child will treat others respectfully and courteously.
* The child will keep hands and feet to himself.
* The child will remain quiet and seated during the lesson.
* First and second grade student will use a quiet, raised hand to be called on during lesson.

**7. General or Specific Accommodations for Special Needs Learners:**

* + This is a classroom for students with autism, so many accommodations are already in place. Specific accommodations are in each child’s IEP; general accommodations include:
    - Frequent reinforcement using verbal praise or edible rewards.
    - Very low student-teacher ratio, with 2 paraprofessionals and 1 main teacher at the minimum for 8 students.
    - Separation by at least 2 peers for students who are learning to interact with each other.
    - Seating that allows all students in close proximity of the instructing teacher.
    - Differentiated objectives to allow for individualized goal acquisition.

**8. Description of Learning Activities**

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| **Lesson Implementation** |
| Introductory Activity:  The teacher should ask students to recall what a solid, liquid, and gas are with relation to water. Then she should invite the students to join her in the open space.  Modeling/Demonstration:  The teacher should explain to the students that solids, liquids, and gasses are made up of teeny tiny parts called molecules. Tell the students that when something is a solid, the molecules move very slowly, when something is a liquid they move normally, and when something is a gas they move very quickly. Now, model squatting down for a solid; walking for a liquid (or slow motion walking if in the classroom); and running for a gas (or fast walking if in the classroom).  Guided Practice and Feedback:  Tell the students that they will now pretend to be molecules in water. First, ask everyone to be a solid and squat down. Next, have everyone be a liquid and walk. Finally, have everyone be a gas and walk quickly/run (whichever is appropriate for the setting). Go through this 2-3 more times until everyone gets it with only the prompt of solid, liquid, or gas.  Now, introduce the game. In the game, music is played by a teacher and the students can dance to it. When it stops, the caller says solid, liquid, or gas. Whichever one is said notes what the students should do based on the earlier practice. If any students do the wrong one, they are out until only one student is left. Then this student becomes the caller. Play this for about 5 minutes with the teacher being the caller, but no one getting out (only corrected). Once the students seem to have the gist of the game play once more as the caller, and the last one standing will take your place.  Independent Practice/Exploring:  While the students are playing on their own, only help by playing as the referee. Give them time to enjoy the game. A teacher should always control the music so that it goes off about every 10-30 seconds—keeping the game moving and fun.  Formative Assessment:  Students can be assessed by whether or not they are getting “out” in the game. While students are out, the teacher may review the solid, liquid, and gas concepts with them to help reteach.  Accommodations:  If students are having trouble remember in which is what action, give them a visual cue card (attached). This should only be used if this will help them learn—not if it will mean they do not have to learn. The card should be faded, if possible, over time.  Review and Preview:  Review the concepts of solid, liquid, and gas as the students have liquid rehydration after the game. |

**9. Potential Areas of Difficulty with the Content and Correction Procedures:**

Students who are struggling with learning the concept may get frustrated. These students may use a visual cue card.

Students may get too competitive in the game. If this occurs, keep the teacher as the caller with no one being called out.

Some students are working on IEP objectives related to speech that do not necessary mirror the format of this lesson. In order to help them develop those academic skills in a multi-curricular setting inductive of generalization, targeting of objectives may be modified to include these goals.

**10. Summative Assessments:**

At the end of this unit, students will participate in a one-on-one student teacher interview. For this lesson, the following question will be included:

How does the inside of a solid move, a gas? (slow, fast or show me…)

Students in this class are frequently being probed for all of their IEP objectives. They are assessed for each weekly. Below are sample weekly data collections for the IEP objectives included in this lesson for each student.

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| Red:  Throughout the school day, and when an item/ activity is or is not present, Red will accurately request and item/activity (e.g. say, “skittle” instead of “green”) using a phrase consisting of 2 or more words for at least 10 different items/activities throughout the school week over 3 consecutive weekly probes.   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - 10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + - \_\_\_\_\_% |
| Green:  During small/large group instruction in either the regular education or special education classroom, Green will remain on topic while contributing to the discussion (e.g. he will not bring up his dog while the group is discussing the weather, etc.) for 10/10 opportunities presented over 3 consecutive weekly probes.  1. + - 6. + -  2. + - 7. + -  3. + - 8. + -  4. + - 9. + -  5. + - 10. + - \_\_\_\_\_\_%  When asked about a past event, Green will accurately report about it by stating 3 (or more) details including when it occurred, for at least 4/5 past events over 3 consecutive weekly probes.   1. 1 2 3 + - 2. 1 2 3 + - 3. 1 2 3 + - 4. 1 2 3 + - 5. 1 2 3 + - \_\_\_\_\_% |
| Blue:  Throughout the school day (task demand, transitions, preferred activities, etc.), Blue will continue to improve appropriate behaviors (i.e. squeezing head or hands) by decreasing the number of times he hits the sides of his head/bangs his head, from a current rate of 230 per week to 5 or less per week over 5 consecutive weekly probes. \_\_\_\_\_/week  During group instruction (e.g. Morning Opening/Circle), Blue will independently ask for a break or remove himself from the group quietly and calm down for 90% of opportunities present throughout the school week over 3 consecutive weekly probes.  1 2 3 4 5 6 7 8 9 10 + - \_\_\_\_\_%  Note: Probes taken from first 10 opportunities presented. |

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| Navy:  When participating in a group activity, or after he has completed an independent activity, and Navy wants to gain the attention of an adult, Navy will independently raise his hand to gain attention from an adult while remaining quiet (no talking or noises) for 80% of opportunities presented, over 3 consecutive weekly probes.  1. + - 6. + -  2. + - 7. + -  3. + - 8. + -  4. + - 9. + -  5. + - 10. + - \_\_\_\_\_\_% |
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**11. Reflections**: This was a bit rough due to attention. Students were able to play the game, but many needed one-on-one assistance. I would play this with older students in the future. We did switch the movements to different dances, and this helped the younger students. They did all enjoy getting to move around.

**12. Sources:**

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| **S**olid | **L**iquid | **G**as |
| **http://thesirenstale.files.wordpress.com/2013/03/ice-cubes.jpg** | **C:\Users\Gina\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\11CFPMJ7\MC900441752[1].png** | **C:\Users\Gina\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\SA2DUNMK\MC900432591[1].png** |
| **C:\Users\Gina\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\SA2DUNMK\MC900445408[1].wmf** | **C:\Users\Gina\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\1U83PFEY\MC900241885[1].wmfC:\Users\Gina\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\9Z98PWL4\MC900441417[1].wmfC:\Users\Gina\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\9Z98PWL4\MC900288999[1].wmf** | **C:\Users\Gina\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\11CFPMJ7\MC900356149[1].wmf** |