



Creating A Non-Traditional Instruction Day Plan

NON-TRADITIONAL INSTRUCTION DAY GUIDANCE DOCUMENT

WVBE Policy 3234, School Calendar, permits counties to utilize up to five days of instruction in a non-traditional setting. This document may be employed to assist county boards in developing an NTID plan that promotes rigorous learning on days when students cannot be in school.



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General Information

Pursuant to West Virginia Code (WVC) §18-5-45 (2) (B) the West Virginia Board of Education (WVBE) gives county school boards the option to apply for Non-Traditional Instruction Days (NTID).

Prior to 2017, WVC §18-5-45 required schools in WV to attend 180 separate days of instruction within the school facility. When an unforeseen emergency within a county required all schools to close, students and faculty were mandated to make-up missed instruction by coming to school on a day previously scheduled for other purposes, or to attend school longer than the originally planned school term. This rule forced counties located in the mountainous region of the state, where snowfall averages upwards of two feet in a given month, to attend school during extreme weather conditions, or attend school well beyond the originally scheduled end of term.

As a solution to the disruption of instruction during weather related emergencies, House Bill 2711, now WVC §18-5-45, addressed the delivery of instruction through alternative methods on up to five days when schools are closed due to inclement weather or other unforeseen circumstances. In response to this legislation, the WVBE approved an application process for county school boards to utilize up to five days of alternative instruction when planning the school calendar.

West Virginia Board of Education Policy (WVBE) 3234, School Calendar, defines the instructional term, requires districts to create school calendars to meet 180 separate days of instruction, and requires the formation of district policies to address early dismissals and late arrivals, among other requirements of statute.

WVBE Policy 3234 provides flexibility and options for county boards to determine when the use of a Non-Traditional Instruction Day is necessary. On occasion West Virginia school districts may have to cancel school due to an emergency, rethink how instruction will be delivered to students when the traditional methods of instruction are not feasible, or provide instruction in a non-traditional manner for other various reasons. In response to this and other concerns of the districts, the WVBE promotes the use of Non-Traditional Instruction Days to address days when students are not receiving instruction within the school facility. School districts may utilize up to five days of non-traditional instruction. The WVDE has developed an application to give districts the opportunity to submit a plan to meet 180 separate days of instruction while continuing instruction when students are not in the traditional learning setting. In order to take advantage of Non-Traditional Instruction Days, county boards must have a WVBE approved application on file with the West Virginia Department of Education (WVDE).

The NTID application can be found at the WVDE State Website: <https://wvde.state.wv.us/calendar/calendar-development-resources.html>

Developing a NTID Plan

The WVBE provides opportunities to counties to utilize NTID and will approve certain alternatives with respect to instructional time proposed by a county board that meet the spirit and intent of applicable statutes and are intended solely to optimize student learning on days when all students in the county are unable to attend school in the traditional learning facility.

The NTID application should reflect:

- Lessons and materials for students to master content and skills as specified in all applicable state-approved content standards.
- Collaborative and sufficient planning and preparation time for educators to promote professionalism, decision making, and quality/engaged instructional experiences in preparing for NTID.
- Processes and procedures in place to certify a consistent and measureable instructional day and/or instructional time.

Applications for NTID should encompass standards-driven teaching and learning to:

- Recreate the school day to provide quality instruction encompassing learning activities a student would typically be engaged in during a traditional school day.
- Provide for instruction on what normally would be a lost instructional day.
- Serve the educational plans and diverse needs of all students by honoring student IEPs and Section 504 Plans.

Requirements for NTID:

- All NTID applications should include evidence of stakeholder participation and support.
- All expectations must be communicated to interested parties, namely staff, student, and parent preparation for the NTID.
- All students must have accessibility to support services and required provisions.
- There should be in place contingency protocols for students and teachers unable to participate in the NTID.

Time-line for Planning

Applying:

Applications must be submitted annually. The application period for NTID is the spring before the school year of implementation. All applications must be submitted with the 2018-2019 School Calendar on or before May 4, 2018.

Application Process:

The NTID application asks questions relating to:

- Delivery method of instruction
- Student access to the internet and /or devices
- Meeting student-specific plans, such as IEPs, 504s, etc.
- How student and teacher participation will be measured
- How evidence of learning will be gathered
- Professional learning for staff
- Duties of professional and service personnel

- Stakeholder involvement
- Community partner engagement
- Informing the community about the plan

After applications are submitted, the WVDE will review the applications based on thoroughness and thoughtfulness of answers by using the NTID Application Considerations. The results of the review will be presented to the WVBE for evaluation and approval. Since each application describes a county-specific plan, the lessons and materials for individual schools are not critiqued as much as the planning and details contained within the plan. The county is responsible for ensuring the quality and appropriateness of the standards aligned instructional plans for individual schools. Included in this document is a Standard Lessons and Materials Considerations county boards may utilize when evaluating lessons and materials from individual schools utilized on NTID.

The application period for the 2018-2019 school year ends on May 4, 2018, and must be submitted with the 2018-2019 School Calendar to thammond@k12.wv.us.

Notification of Approval:

Once a county application for NTID is reviewed and scored based upon the NTID Application Rubric, the applications scoring “proficient” will be forwarded to the WVBE for approval to utilize NTID during the 2018-2019 school year. After formal approval is granted by the Board, counties will be notified. Counties who did not gain approval will be notified, and feedback will be provided in order to aid in re-applying for NTID the following year. Notification will be provided to county boards after the regularly scheduled July WVBE meeting.

Upon approval by the WVBE, counties will be required to submit documentation at the end of each year that is similar to the documentation process used when submitting school cancellations and make-up days.

Who Should Participate in the Application Process

Students:

As NTID are considered instructional days, all Pre-K-12 students are expected to participate. Counties may determine what participation is for their students, whether it be accessing online course work, completing a project, a paper assignment, or other method of participating in instructional activities. Counties track and report to WVDE the overall student participation rate for each NTID.

Professional Personnel:

NTID are considered teacher work days and count toward fulfilling the number of work days required by contract. As such, teachers are required to work on NTID, though each county may decide the work location and duties of the teachers and administrators on NTID. Teachers and administrators track and report to WVDE student achievement for each NTID.

Service Personnel:

Each county is responsible for determining how service personnel are to report to work on NTID.

Considerations must be made to all stakeholders who will be responsible for guiding and providing for students who are participating in NTID.

Parents/Caregivers:

Parents/Caregivers should play a major role when applying for NTID. The input parents/caregivers provide will increase buy-in and ensure the likelihood of student involvement and optimal learning during NTID.

Community Members:

- Community partnerships are vital when considering applying for NTID. Libraries, churches, and other organizations in the community may provide computer access for students without devices, and should be consulted when preparing to submit an NTID.
- Community churches and area foodbanks are vital resources when multiple school days are cancelled. Child nutrition is a critical concern of the county school system, and partnerships with such organizations can prove beneficial when providing nutrition to students if schools are closed for extended periods of time.
- Media should be consulted when preparing an NTID application to provide input on how the NTID will be communicated to the larger community. Social media, broadcast, and internal communication will ensure students and community members are prepared to respond as planned during NTID.

Training for Students

The student body at all schools in the county are to be made aware of their responsibilities during NTID. Each school should prepare students with the appropriate tools they will need during NTID. Methods of communication and contact numbers/email addresses, etc, should be made available to students to provide assistance if they should require help or other guidance. Students should be made aware of their responsibilities for learning and how evidence of learning will be gathered and what expectations for their work will be required when traditional schooling resumes.

Training for Professional Personnel

Educators and administrators should be made aware of their responsibilities during NTID. Each county should prepare professional personnel with the appropriate tools they will need during NTID. Rubrics for lessons and materials should be provided for consistency among personnel as planning commences for NTID. All professional personnel should be held to the same expectations and responsibility level in regard to planning and preparation for NTID. Educators will need to be made aware of where they are to report to work and how they are to document student participation and evidence of student learning.

As plans are made for utilizing NTID, please keep in mind that students receiving special education services should continue modifications and considerations outlined in the individual's IEP or Section 504 Plan. During NTID, special education teachers should be available to assist students and collaborate with classroom teachers to create assignments that ensure student success and fulfill the requirements of a student's IEP.

When planning for NTID, be aware of and make considerations for our most vulnerable populations. Students who are homeless, are in a home where English is a second language, students with limited parental support, or without access to technology, and a variety of other situations would benefit from opportunities to report the activities of the NTID in an alternative method. For example, permitting students to have extended time to complete and turn in assignments several days after regularly scheduled classes resume, or providing options that are adapted to the student's particular needs. NTID should not exclude or penalize students who do not have the same supports as other students in their school.

Training for Service Personnel

All staff should be made aware of their individual responsibilities during NTID. Each county should prepare service personnel with the appropriate tools they will need during NTID.

Training for Parents/Caregivers

The parents/caregivers of all students in the county are to be made aware of the responsibilities of their students during NTID. Each school should prepare parents with the appropriate tools they will need during NTID, communication and contact numbers/email addresses, etc., to provide assistance if they should require help or other guidance. Parents/caregivers should be made aware of the student's responsibilities during NTID.

Training for Community Members

Libraries and churches should be informed and made aware of communication and contact numbers/email addresses, etc., to provide assistance if they should require other help or guidance from school personnel. Staff in libraries and churches should be made aware of their role during NTID, and given appropriate tools and guidance when NTID is in place in their county.

Rubrics for County, School, and Educator Plans for NTID

The following pages are provided for the consideration of counties, schools, and educators as they begin the process of planning and preparing employees, educators, parents, students, and other stakeholders to participate successfully in NTID. Each county plan is unique and serves the needs of the members of the county and the communities where the schools are located. These suggestions are ideas for counties, schools, and teachers to launch the thinking process regarding NTID, and certainly are not intended to be the whole of a county, school, or educator plan. The considerations allow the county, school, and educator to examine what will work best in their environment, and utilize what works and supplement what works best with respect to the county, school, and individual educator.

NTID Considerations for County Plans

Best Practice	Our County Plan	Completed
Surveys sent to all school personnel, students, parents, and community stakeholders. Results collected and data presented at an open school board meeting. Digital voting determines if the plan has favor with all stakeholders.		
Teachers participate in professional learning where flipped classroom, blended learning, and innovative learning environments have been explored.		
Parents are given ample time to read, discuss, and vote on the plan. Teachers and administrators communicate personally with the parents about what responsibilities their child will have during NTID. Parents are trained in all aspects of the plan, and are aware of contact information, where to find nutritional support, and how to assist their children during NTID.		
Teachers and administrators communicate personally with the parents about what responsibilities their child will have during NTID.		
County boards have ensure all school personnel have access to video Skype (Office 365) or other communication platform and can provide assistance through telephone or mobile device.		
The plan has multiple options for students without internet service or electronic devices.		
The plan provides specific information about the responsibilities for each individual within the school on NTID.		
The plan clearly identifies the number of days students will have after the NTID to submit evidence of learning.		
Community service agencies are part of the NTID plan, and nutritional concerns during NTID are addressed in an exemplary fashion.		

NTID Considerations for School Plans

Best Practice	Our School Plan	Completed
Surveys were sent to all school personnel, students, parents, and community stakeholders. Results were collected and data presented at an open school board meeting. Digital voting determines if the plan has favor with all stakeholders.		
The school faculty senate has voted and approved the plan.		
Teachers have participated in professional learning where flipped classroom, blended learning, and innovative learning environments have been explored.		
Parents have been given ample time to read, discuss, and vote on the plan. Teachers and administrators have communicated personally with the parents about what responsibilities their child will have during NTID. Parents are trained in all aspects of the plan, and are aware of contact information, where to find nutritional support, and how to assist their children during NTID.		
Teachers and administrators have communicated personally with the parents about what responsibilities their child will have during NTID.		
Principals have ensured that all faculty have access to Office 365, Skype or other communication device they can utilize with students during the NTID.		
The plan has multiple options for students without internet service or electronic devices.		
The plan provides specific information about the responsibilities for each individual within the school on NTID.		
The plan clearly identifies the number of days students will have after the NTID to submit evidence of learning.		
The faculty senate has voted on a grading plan for the student work completed during the NTID.		

NTID Considerations for Individual Classroom Educators

Best Practice	My Classroom Plan	Completed
The lessons planned for NTID are aligned to the WV College- and Career- Readiness Standards and are developmentally appropriate for the students in my classroom.		
The lessons planned for NTID are an extension of current learning and are challenging and engaging.		
The lessons planned for NTID promote student agency by allowing multiple entry levels for diverse student need.		
The plan addresses student IEPs and Section 504 Plans.		
The lessons planned for NTID give students opportunities to explore learning outside of the regular classroom environment by engaging students in holistic learning.		
The lessons planned for NTID promote physical activity during the NTID period. This physical activity could be tied to lesson completion, for example, measure heartrate during a physical activity, count repetitions of calisthenics activity such as jumping jacks, sit-ups, steps, etc.		
The lessons planned for the NTID give students' opportunity to explore the Arts during NTID. Students may listen to a musical selection pre-recorded on a device and write about the piece, students may create an artistic piece from objects found around their home.		
The students have been made aware of the county plan regarding nutritional services provided during NTID.		
The students are trained in what to do during NTID, and understand the purpose of NTID.		
The students are provided with all materials needed for NTID, and are given ample time to successfully complete NTID.		
The students are fully aware of all contact information and how to reach school personnel during NTID.		
The students know expectations for when they return to school regarding lessons planned for NTID.		

WVDE Rubric for Reviewing County NTID Plans

Criteria	Proficient	Needs Improvement
Evidence of surveys sent to all school personnel, students, parents, and community stakeholders. Results collected and data presented in application.		
Evidence provided of teachers participating in professional learning where flipped classroom, blended learning, and innovative learning environments have been explored.		
Evidence of communication to all stakeholders and communication to parents/caregivers about what responsibilities children will have during NTID. Parents are provided contact information, where to find nutritional support, and how to assist their child during NTID.		
Teachers and administrators understand their role during NTID and have communicated personally with the parents about what responsibilities their child will have during NTID.		
County boards have ensured all school personnel have access to video Skype (Office 365) or other communication platform, and can provide assistance through telephone or mobile device.		
The plan has multiple options for students without internet service or electronic devices.		
The plan considers the needs of students with IEPs and Section 504 Plans.		
The plan has in place options for students who are among more vulnerable populations and is in no way punitive to students who do not have the same supports as other students in the county.		
The plan provides specific information about the responsibilities for each individual within the school on NTID.		
The plan clearly identifies the number of days students will have after the NTID to submit evidence of learning.		
Community service agencies are part of the NTID plan, and nutritional concerns during NTID are addressed in an exemplary fashion.		

Reviewer_____

Approved_____ Not Approved_____

Comments:

Exemplar Lessons for Guidance

The following pages provide a limited selection of lessons appropriate to use for specific programmatic levels during NTID. The lessons may be altered to best serve the specific needs of students, they may give educators ideas about what they may do to engage students in an activity during NTID, and they may provide a launch for brainstorming during PLCs as educators plan for NTID. These lessons have been selected by educational experts at the WVDE as exemplars for engaging students with challenging activities when school is not in session. Please utilize these as tools for inspiration, not as suggested lessons. The lessons crafted by individual educators for an NTID experience should be directly associated with the WV College-and Career-Readiness Standards for the grade level, and for the students in the classroom at an individual school. Relevant and timely lessons are the most beneficial for student achievement. You may find more resources at the WVDE Calendar Development Resources page <http://wvde.state.wv.us/calendar/calendar-development-resources.html> .

Suggested Activities for Pre-K during NTID

Pre-K students learn best when immersed in activities that engage and interest them. Pre-K students should have numerous opportunities to practice and use rich and meaningful vocabulary through conversation with peers and adults.

The activities listed are a limited selection of activities parents or caregivers may engage with their child.

When making breakfast for your child, have them tell you about their daily routine:

- Wake up, get out of bed, brush teeth, get dressed, eat breakfast. Discuss the sequence (order) of events using words like first, then, next, finally, etc.

Have your child count or sort objects. Children can count cereal pieces, sort colors, group sets of items, etc.

Have your child select a story to have read aloud. Read the story to them and discuss the characters of the story, the order of events using words like first, then, next, last. Have your child draw a picture of their favorite part of the story.

Ask your child to help you prepare lunch. Discuss the order of making lunch using words like first, next, last, etc. Have your child count the number of food items, ask them to describe their favorite food and explain why, have them describe the flavor (salty, sweet, sour, etc), ask them to describe the texture (rough, smooth, soft, hard, etc), ask them to describe the smell, and the sound the food makes when they eat it, for example, carrots make a crunchy sound.

Have a discussion with your child about the weather and what the appropriate clothing to wear is for the weather outside. Have your child select clothing to wear and discuss the order of putting on the clothing, for example, coat, gloves, boots, etc.

Go outside with your child. If it is snowy, discuss the feel of the snow, the texture, the sound his or her feet make when walking. Have your child describe the way the air feels. Discuss the temperature and precipitation. Use appropriate vocabulary and ask your child to do the same.

Work with your child to count objects. Begin with 5 objects and group the objects. You may work to help children classify objects, as well. For example, put all the yellow items together, the red items together, and so on. Have your child explain why they grouped the objects the way they did. Have them sort the objects in a different way. Explain their thinking.

Parents can have their child help them prepare a snack and discuss the snack preparation.

Play should be constructive and meaningful.

Parents can engage in a number of other activities such as finger plays, counting songs, finger painting, coloring, etc. When school resumes, have your child bring their created items to school and show their teacher what they did.

Pre-K Snow Day Packet

In this packet you will find a list of many activities you can choose to do with your child at home during a Non-Traditional Instruction Day (NTID). When school is cancelled please choose at least 1 activity from each domain to complete with your child and record on the corresponding NTID Form. Return that form to school with your child on our next school day but be sure to keep the activity sheets for use on the next NTID.

Social Emotional

- Encourage independence in every day routines and activities. Help your child be the helper at home. Assign him or her a job, praise and talk about what a big help they are to the family. Acknowledge his or her efforts. This will really make him feel important and helpful to his family.
- At home, discuss the importance of using a tissue so that you do not spread germs and make others sick. Talk with your child about when it is important to wash their hands as well as other things they can do to help prevent the spread of germs.
- Look through magazines and books you have at home and talk about the emotions on the faces of the people in the pictures and characters in the books. Talk with your child about why those people are feeling that way and about what makes your child happy, sad, scared, excited, etc.
- Sometimes every child needs to be reminded to share and take turns. Playing simple turn taking games at home can help encourage the importance of taking turns. Think of a game of activity that your child likes to play and encourage him or her to take turns and praise and acknowledge his or her attempts at turn taking.
- Pre-K children often enjoy working in the house area in the classroom. With supervision, allow your child to help you set the table, or wash the dishes, care for a pet, or fold laundry. This will help your child feel a role in the family.
- Have your child work on her social skills by letting him or her practice ordering his or her own food when playing restaurant. Then talk about how they could do this the next time you go out to eat in a real restaurant. This will help your child get over any shyness towards strangers.

Language and Literacy

- Your child needs practice writing his or her name. Using different writing tools, work with your child to write their names and the names of others. Talk about the letters that are in each name, talk about how some of the letters in their name are the same as some letters in other's names and talk about how some letters have straight lines and curvy lines.
- Read a book with your child. Talk with them about the pictures in the book and then go back through the book and talk about what they remember from the story.
- PreK students like dramatic play. Read your child a story and let him or her dress up in clothes and act the part of one of the characters.
- Make a "Get Well" card for someone you know who is sick or hurt. Encourage your child to draw a picture on the card and be sure to sign their name. Also, if they are ready and able to do so, encourage them to write the words "Get Well".
- Recite the rhyme "Hickory, Dickory, Dock" with your child. Replace some of rhyming words with silly words and encourage your child to think of words that sounds the same. For example: "Hickory, dickory, dat. The mouse ran up the cat. The clock struck 2. The mouse tied his shoe. Hickory dickory day."
- Go through the kitchen and talk with your child about his or her favorite snacks. Get out the boxes of those foods and encourage your child to make you a grocery list by copying the words or the items from the boxes.
- Ask your child what he would like to be when he grows up. Ask him to draw a picture of what he wants to be and tell you a story about it. Write down what your child says, word for word. Send it to school to share with his teachers.
- Pour salt in the bottom of a cookie sheet or cake pan. Help your child practice writing the letters of his name in the salt.
- Play, "I'm Going on a Picnic" and everything you take has to start with the same letter. For example "p", You might say, I'm going on a picnic and I'm going to take pie". Your child has to repeat what you said and add something else. He or he or she might say, "I'm going on a picnic and I'm going to take pie and peaches". Then you might say, "I'm going on a picnic, and I'm going to take pie, peaches, and pizza. Try other letters also.
- Your child is doing well writing their name but here's a fun way to practice at home. Using shaving cream on the table allow your child to practice writing his name. Encourage him to write his name with one capital letter, and rest lowercase letters.

Math and Science

- While folding laundry, allow your child to help you match socks. You may also roll the pairs in a ball and allow them to toss the sock balls into a basket and count how many times they “score”.
- Another simple activity for counting at home is to have your child to go around the house and collect items that he or she would like to count. Encourage her to count one item at a time. Repeat this as much as he or she would like. Then encourage her to line them up and compare the lengths they create when lined up (like a bar graph).
- Encourage your child to start learning his or her phone number. Once your child does this encourage him or her to practice writing those numbers as well.
- While your child is eating a snack have him or her count out groups of 10 or less. If he or she eats 2, how many are left? If he or she eats 4, how many are left? For example: I have 6 small cookies. I ate 2 now I have _____. I have 9 goldfish crackers. I ate 4, now I have_____.
- Practice cutting simple shapes such as squares, rectangles, circles, and triangles, out of paper. Be sure to hold the scissors correctly (thumb UP). Then paste the shapes on another piece of paper to make a picture if you’d like.
- Encourage your child to work on his fine motor skills and counting by counting pennies. Encourage him or her to pick up one penny at a time and place it in a cup.
- Using a deck of cards, put all cards of the same suit together or match the numbers together.
- Make play dough with your child using the following recipe. Allow them to help you measure and mix the ingredients. Talk with them about what happens when the dry ingredients are mixed with the wet and talk about being safe when cooking and using boiling water.

Play Dough Recipe

CautionThere is hot water involved in this recipe. Be careful!

Ingredients:

2 cups plain flour (all purpose)
2 tablespoons vegetable oil
1/2 cup salt
2 tablespoons cream of tartar
Up to 1.5 cups boiling water (adding in increments until it feels just right)
Food coloring (optional)

Directions:

- Mix the flour, salt, cream of tartar and oil in a large mixing bowl
- Add food coloring TO the boiling water then into the dry ingredients (color optional)
- Stir continuously until it becomes a sticky, combined dough
- Allow it to cool down then take it out of the bowl and knead it vigorously for a couple of minutes until all of the stickiness has gone. * This is the most important part of the process, so keep at it until it’s the perfect consistency!*
- (If it remains a little sticky then add a touch more flour until just right)

Fine and Gross Motor

- Build on your child's spatial awareness by playing limbo. Using a long stick, a broom handle works great. Decrease the space between the floor and the stick. Encourage your child to know where his or her body is in relation to the broom. Great game to play with the family.
- Using the play dough you made in the above activity, encourage your child to pinch and roll the play dough. Allow them to use scissors to cut the play dough. Encourage them to use the little fingers to do all sorts of things with the play dough to strengthen their "finger muscles".
- Play a simple game of "Simon Says". Many of the movements will likely use the gross motor muscle groups (jumping, stomping, hopping, marching, clapping, etc.)
- Encourage your child to make a collage with pictures from a magazine. They could search for items to cut out of a certain color or animals or people or food etc. After the pictures are cut, allow them to paste them to another paper and talk about the pictures they chose.
- Set up empty soda bottles and let Jack "bowl" by knocking them down with panty hose stuffed with newspaper or a rolled up sock.
- Paint one hand and make hand prints of all family members, pets can be included, on heavy paper using different color paints. After the prints dry, your child can cut them out and practice sorting them by size, smallest to largest, then largest down to smallest. Finally have your child glue them onto a heavy piece of paper in any design, place the paper in a frame and date it. You now have a keepsake for your wall.
- Give your child shirts or jackets with zippers and buttons and snaps. Have him or her work with the buttons and zippers and practice putting them together and taking them apart.

The Arts

- Encourage your child to draw pictures of the members of her family. Encourage him or her to add arms, legs, eyes, nose, and mouth!
- Your child really enjoys using markers and crayons. Encourage him to go around the house and find material that he can use to create a piece of artwork. Allow him to use old newspaper, magazines, and different items, such as boxes. Encourage him to create different shapes and letters. This will help him with his thinking skills as well as creativity.
- Create a picture using a variety of items around the house, beans, macaroni, cereal, rocks, buttons, etc. and glue. The only rule to this activity is he or he or he or she can only put one piece on at a time. What can you create?
- Sing songs with your child. Talk with them about what movements they could make to go with the song. Encourage them to perform their song in front of a friend or family member.
- Encourage your child to create a picture of what it looks like outside using a variety of different materials around the house. Glue, and sugar, flour or salt could make snow. Many other materials could be used to create the scene.
- Encourage your child to trace cookie cutters and color or paint the patterns. Try dipping the cookie cutters into paint and letting your child stamp out pictures.

NTID #1

Please use this form to record the activity you chose in each area and any notes on your child's progress during the activity.

Social Emotional Activity

Language and Literacy Activity

Math and Science Activity

Fine and Gross Motor Activity

The Arts Activity

NTID #2

Please use this form to record the activity you chose in each area and any notes on your child's progress during the activity.

Social Emotional Activity

Language and Literacy Activity

Math and Science Activity

Fine and Gross Motor Activity

The Arts Activity

NTID #3

Please use this form to record the activity you chose in each area and any notes on your child's progress during the activity.

Social Emotional Activity

Language and Literacy Activity

Math and Science Activity

Fine and Gross Motor Activity

The Arts Activity

NTID #4

Please use this form to record the activity you chose in each area and any notes on your child's progress during the activity.

Social Emotional Activity

Language and Literacy Activity

Math and Science Activity

Fine and Gross Motor Activity

The Arts Activity

NTID #5

Please use this form to record the activity you chose in each area and any notes on your child's progress during the activity.

Social Emotional Activity

Language and Literacy Activity

Math and Science Activity

Fine and Gross Motor Activity

The Arts Activity

Suggested Activities for Kindergarten Students during NTID

Kindergarten students learn best by doing and talking about what they are doing. Parents and caregivers may engage kindergarten students in a variety of conversations regarding what they are observing and sensing (feeling, smelling, touching, and hearing).

English/Language Arts:

Have your kindergartener select a book for you to read. Read the story to him or her and discuss the characters and the sequence of the story. Have the child draw a picture and retell the story to you. Discuss words that may be unfamiliar to the child and use them in a variety of contexts throughout the day, each time bringing attention to the new word.

Create finger puppets and tell the story about the weather outside.

Go outside and write your name or familiar words in the snow by either using your hands, or stomping out a path in the snow.

Mathematics:

Collect, count, sort and classify objects from home. A kindergartener may have a stuffed animal collection they sort into large and small, color, size, etc.

Go outside and make snow balls and then write numbers in the snow next to the number of snowballs either by using your hands, or stomping out a path in the snow. 1 snowball=1, etc.

Sort objects into groups of five. Have students count the objects, first by ones, then by fives.

Add objects together. Three buttons added to two buttons make five buttons, etc.

Take objects away. Five buttons take away three buttons leaves two buttons, etc.

Science:

Make a snowball and bring it inside. Record the amount of time it takes for the snowball to melt at room temperature. Make another snowball and bring it inside. With the assistance of an adult, melt the snowball in a pan on the stove. Discuss how the ice melts, and begins to boil and turns into steam. Discuss the process of going from different states of solid, liquid, and gas.

Collect a snowflake on a piece of black or dark fabric or paper. Have the child take a picture of the snowflake. Ask the child to count the number of sides of the snowflake, describe the shape, the size, and weight. Have the child draw a picture of the snowflake on paper.

Social Studies:

Look at a map of the United States. Help the child locate the state of West Virginia. Discuss the shape of the state. Help your child find where his/her town is located. Talk about the difference between country, state, county, and town.

ELA Grades 6-8

Successfully complete enough of the learning activities below to complete THREE* runs. You may only use each activity once, so choose the activities wisely to make the most of your time and efforts.

SINGLES – one base each when completed successfully based on eighth grade WV College and Career Readiness Standards for English Language Arts

Learning Activity Description – Pay Close Attention to Requirements Please	Title of Book Used to Complete This Choice	Grade Earned
<p>Create a Glossary – Select at least 10 words from a book you are reading that are challenging, interesting, etc...Then, make a context-based glossary by listing the words, the page numbers where they were found, the whole, original sentence containing them, and the best dictionary definition that you can find to match that specific meaning.</p>		
<p>Create an Acrostic Poem – Select one character from the book and use his/her name to compose an acrostic poem. Make sure that the words you use in the poem show the character’s actions and traits.</p>		
<p>Story Map – Use either a timeline or a plot diagram to map out the events of the story. Your story map must include at least five events (one each for exposition, rising action, climax, falling action, resolution). The description of each event should be at least three sentences in length and help the reader understand what happens in the story.</p>		
<p>Character Sketch – Create a hand-drawn sketch of one of the characters from your book on an 8x11 piece of art or computer paper. The sketch needs to be neat and in color (unless you can justify grayscale based on the mood of your character or setting of your book). On the back of the sketch, explain why you drew the character as you did – use information from the book to support your decisions.</p>		
<p>Theme Paragraph – Compose at least one paragraph (5+ sentences) in which you (1) identify one of the themes of your book, (2) explain how you know that it is a theme in the book, and (3) support your explanation with information from the book that helped you identify the theme.</p>		

DOUBLES – two bases each when completed successfully based on eighth grade WV College and Career Readiness Standards for English Language Arts

Learning Activity Description – Pay Close Attention to Requirements Please	Title of Book Used to Complete This Choice	Grade Earned
<p>Book Review – Compose a book review at least three paragraphs long. The review needs to (1) give a brief summary of the book – no spoilers please, (2) highlight the best features of the book such as exciting plot, deep characters, intriguing setting, etc..., and (3) evaluate which parts of the story were best and which parts you found challenging, less interesting, confusing, etc...</p>		
<p>Book Wordle – Create a Wordle about the book using either a computer program or art supplies. Make sure that the Wordle contains at least 20 words that represent the characters, setting, plot, etc...Then, on the back, compose one or two paragraphs about the book using all of the words in your Wordle.</p>		
<p>Tweet War – Select two characters from your book who are having a conflict (like the protagonist and antagonist). Compose an exchange of at least six tweets back and forth between the characters which give the reader insight into their conflict as it is described in the book. Remember to keep the 150 characters per tweet limit and use hashtags to create trends.</p>		
<p>Story Board – Imagine that your book is being turned into a movie. Unfortunately, the producers can only afford to tell the story in eight scenes. Create a story board using at least two pieces of 8x11 printer or art paper. The story board needs to have eight boxes and tell the story in the same sequence as it is found in the book. Inside the boxes you need to draw a picture representing a key part of the story and then write two or three sentences about what is going on below the picture. On the back of each board, write a paragraph or two explaining why you chose those events to appear in the movie and why you left some events out of the movie.</p>		

TRIPLES – three bases each when completed successfully based on eighth grade WV College and Career Readiness Standards for English Language Arts

Learning Activity Description – Pay Close Attention to Requirements Please	Title of Book Used to Complete This Choice	Grade Earned
<p>Genre Analysis Essay – First, determine the genre of your book (romance, comedy, suspense, fantasy, etc...). Next, look up the traits of that genre. Then, compose an essay (five paragraphs or more) in which you discuss how your book fits within that genre’s requirements. Make sure to use evidence from the book to support your analysis.</p>		
<p>Character Interview – Imagine that you are a journalist for Entertainment Weekly. You have been assigned by your editor to interview at least two characters from your book. Create a minimum of eight questions that you will ask the characters. Then, create an Entertainment Weekly style interview article which contains a brief introduction (who the characters are and what book they are from) followed by your interview questions and answers that you think they would give based on how their characters think, act, and interact in the story.</p>		
<p>Author Study – Read two texts by the same author. Then, compose an essay (five paragraphs or more) that analyzes the author’s style by comparing and contrasting the two texts. Considering such features as word choice, sentence structure, characterization techniques, figurative language use, themes, and plot.</p>		

HOMERUN – may be used one time to make a complete run when completed successfully based on eighth grade WV College and Career Readiness Standards for English Language Arts*8

Learning Activity Description – Pay Close Attention to Requirements Please	Title of Book Used to Complete This Choice	Grade Earned
<p>Book in a Bag/Box – For this choice, you will be creating a presentation about your book. To do this, you will need to prepare a short presentation as well as visuals. First, find a large paper bag, gift bag, or cardboard box to decorate. You will need to decorate the outside of the bag/box on the front with a picture that represents your book and the title of the book and author’s name. On one side, list five words that you found challenging or interesting and their definitions based on the context of the book. On the other side, write a summary of the book in your own words. Secondly, you will need to fill the bag with 7-10 artifacts that represent an element of the book (character, setting, plot, item from the tale, theme, etc...). For your presentation, you will first explain to the class the choices you made when decorating the bag and then you will draw the artifacts from inside the bag and share with the class what each one has to do with the book and why you chose it.</p>		

Mathematics Grades 6-12

The Mathematics Assessment Project (<http://map.mathshell.org/>) offers a variety of formative assessment lesson units that address middle and high school mathematics content. For non-traditional instruction days, the embedded “before the lesson pre-assessment” could provide insight into student current levels of understanding prior to the start of a unit of study.

The formative assessment lessons (<http://map.mathshell.org/lessons.php>) found at the Mathematics Assessment Project website consist of a variety of classroom challenges. These challenges are classroom-ready lessons that support formative assessment. The Mathematics Assessment Project offers two types of assessment lessons. Concept development lessons are designed to first reveal students’ prior knowledge, then develop students’ understanding of important mathematical ideas, connecting concepts to other mathematical knowledge. Problem solving lessons are designed to assess, then develop, students’ ability to apply their mathematical knowledge and reasoning in flexible ways to non-routine, unstructured problems – within mathematics and with real world applications.

The lessons are designed to help teachers assess and improve students’ understanding of mathematical concepts and skills and strengthen their ability to use the Mathematical Habits of Mind. Each lesson unit is structured in the following way:

- Before the lesson, students work individually on a task designed to reveal their current levels of understanding. The teacher reviews student solutions and writes questions to help them improve their work. *For the non-traditional instruction day, students can be assigned the formative assessment task. A sample, titled Getting Things in Proportion, addressing Grade 7 standards related to proportional reasoning is found below.*
- At the beginning of the lesson, a whole-class discussion introduces key features of the concept.
- Students then collaborate in small groups to work on a task related to the assessment task, to assess each other’s work, and write suggestions for improvement.
- In a whole-class discussion, students share their solutions and solution methods.
- In a follow-up lesson, students use their learning and the teacher’s questions to review their work.

Formative Assessment Pre-Lesson Task

Getting Things in Proportion

Q1. Leon

Leon has \$40.

How many Mexican Pesos can Leon buy with his dollars?

Explain how you figure this out.

Exchange Rate

\$1 US = 12
Mexican Pesos

Q2. Minna

This is the call plan for Minna's cell phone:

\$15 a month plus free texts plus \$0.20 per minute of call time.

Minna made 30 minutes of calls this month and 110 texts.

How much does she have to pay the phone company?

Explain how you figure this out.



Q3. Nuala

Nuala drives to her grandma's.

She drives at 20 miles per hour.

The journey takes 50 minutes.

How long would the journey take if Nuala drove at 40 miles per hour?

Explain how you figure this out.



Q4. Orhan

Orhan mixes some purple paint.
He uses three pints of blue paint for every five pints of red paint.
Orhan wants to mix more paint exactly the same color.
He has $17\frac{1}{2}$ pints of red paint.
How much blue paint does he need?
Explain how you figure this out.



Q5. Here are two statements about the math in Q1 to Q4 above.
For each question, decide which statements are **true**. Explain your answers.

	If you double one quantity, you double the other.	The ratio: first quantity : second quantity is always the same.
Q1 Leon	Dollars, Mexican Pesos	Dollars : Mexican Pesos
Q2 Minna	Minutes, Dollars	Minutes : Dollars
Q3 Nuala	Speed, Time	Speed : Time
Q4 Orhan	Blue paint, Red paint	Blue paint : Red paint

What Makes Things Float? Lab-n-a-Bag Directions for Teachers

To begin the Lab-n-a Bag AT HOME, each student you will need:

- 1 copy of What Makes Things Float? Lab-n-a-Bag Worksheets, Part 1, 2, and 3. These should be stapled and folded in half; they may be printed front-to-back.
- 1 sealable plastic bag large enough to contain the folded worksheets and items listed for the Lab-n-a-Bag. A gallon-sized zip bad should do nicely
- 1 empty film canister or empty prescription vial with their lids. If these are repurposed prescriptions vials, be certain the labels have been removed. The film canisters and plastic vials may be different sizes
- assorted small objects of various masses (marbles, paper clips, pennies, nuts, bolts, etc.)

Parts 1-3 of the assignment and the reading selections, SOMETHING TO THINK ABOUT, MAY THE FORCE BE WITH YOU, and SOME IFs, THENs OF FORCE are to be completed by students at home.

Parts 4, 5 and 6 will be given to students AT SCHOOL after they complete Parts 1-3.

Part 4 will require a balance and therefore. Students may need to be instructed on how to use a triple beam balance.

Triple Beam Balance - 01 - Zero the Balance <https://www.youtube.com/watch?v=If5lQjffBfc>

Tutorial: Triple Beam Balance

<https://www.youtube.com/watch?v=BAf6HoVK6JI>

Educators may download and install RealPlayer to their computers, <http://www.real.com/> . This program enables them to download videos from YouTube so they may be played later during class time without worries about internet accessibility. Notice the Download this Video tab on the top right of the video image to the right.

Part 5 may be completed at school or as a homework assignment. It is up to the teachers. Teacher may have student begin the process at school so guidance may be provided to ensure students get organized and off to a good start.

Part 6 is optional but is recommended as students are guided through the writing process to complete a 5-Paragraph Scientific Argument. Students may peer review each other's Part 5 writing as preparation for Part 6 of the assignment. For guidance on how students may be prepared for a Peer Review Process, see

<https://writing.colostate.edu/guides/teaching/planning/critique1.cfm>

<https://teachingcenter.wustl.edu/resources/writing-assignments-feedback/using-peer-review-to-help-students-improve-their-writing/>

<https://lsa.umich.edu/sweetland/instructors/teaching-resources/using-peer-review-to-improve-student-writing.html>

Part 6 may be completed in an English Language Arts class.

See the What Makes Things Float? Lab-n-a-Bag ANSWER KEY for more details.

Created by Robin Sizemore, WVDE, 2017

Name: _____ Date_____

What Makes Things Float? Lab-n-a-Bag

Class Period: _____

S.7.PS.7 plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

S.7.PS.9 construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

Skills

- calculate the volume of a cylinder
- use information and observations to make predictions about the density of objects
- calculate density
- use evidence to support a claim

Materials needed for the Lab-n-a-Bag

- 1 sealable plastic bag large enough to contain items listed for the Lab-n-a-Bag
- Lab-n-a-Bag worksheets (folded in half to fit in the bag)
- 1 empty film canister or empty prescription vial with lid - the same container will be used for the 3 trials.
- small objects of various masses (marbles, paper clips, pennies, bolts, nuts, etc.)
- metric measuring tape

From Home

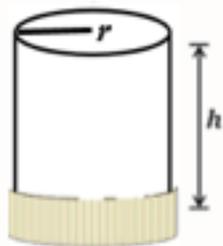
- medium sized plastic tub, bowl, pan, or sink with water (large enough for water and plastic container to float or sink)

Part 1- Procedure:

Use a (metric) measuring tape to determine the radius and height the canister, record the information in DATA TABLE 1 on page 2.

Use the equation provided in IMAGE 1 to determine the volume of the canister, record the information in DATA TABLE 1. An example of how to do the equation has been provided.

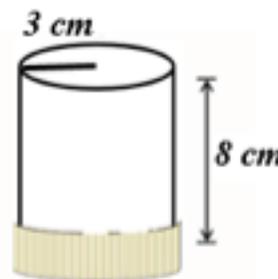
IMAGE 1



$$\text{Volume} = h \times \pi \times r^2$$

h = height of the cylinder
 π (pi) = 3.14
 r = radius of the base circle

Example



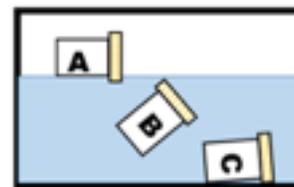
$$\begin{aligned} V &= h \times \pi \times r^2 \\ &= 8 \text{ cm} \times 3.14 \times 3^2 \text{ cm} \\ &= 8 \text{ cm} \times 3.14 \times 9 \text{ cm}^2 \\ &= 226.08 \text{ cm}^3 \end{aligned}$$

Science Grades 6-12

Part 2- Procedure:

1. Using the materials provided and similar materials from your home if needed, place some of the items inside the container and secure the lid to the container.
2. For Trial A, the canister should float on top of the water, see IMAGE 2. You may need to add or remove items from the container to get it to float on top.
3. Remove the container from the water and record the contents of the container in the space provided for Trial A, see space below.
4. For Trial B, place enough items in the canister so it will remain suspended, see IMAGE 2. Again, add or remove items from the container until the container is able to remain suspended once you let go of it.
5. Remove the container from the water and record the contents of the container in the space provided for Trial B.
6. Repeat the process for Trail C, this time placing enough items in the canister so it will sink to the bottom, see IMAGE 2.
7. Remove the container from the water and record the contents of the container in the space provided for Trial C.
8. Place the plastic container with its lid and all items used in this experiment in the plastic bag and take them to school to for the final part of this assignment. In Part 4 of this assignment will be given to you at school, you will use a balance to determine the mass of the container for each trial then.

IMAGE 2



Record the objects that were in the container for each trial.

Trial A-

Trial B-

Trial C-

SOMETHING TO THINK ABOUT-

One of the most important molecules on Earth is water. Water is commonly used as a reference for physical properties. One such physical property is density.

The density of a substance or object is the relationship between the mass of the substance and how much space it takes up (volume). The equation for determining density is $d = m/v$, where m is a measure of a material's mass (e.g., in grams) which is divided by v its volume (e.g., in milliliters).

The density of water depends on the temperature of the water. The usual value for water density used in calculations is 1 g/ml, this reads as 1 gram per milliliter. Because the volume of one milliliter is equal to the volume of one cubic centimeter, the density of water may also be written as 1g/cm³ and read as 1 gram per cubic centimeter. If something is more dense than water it will sink, and if it's less dense than water it will float.

Use the information above to make predictions in Columns 4 and 5 in DATA TABLE 1 below.

DATA TABLE 1: Volume and Prediction for Mass and Density of film canisters

	1	2	3	4	5
	Radius (cm)	Height (cm)	Calculated Volume (cm ³)	Predicted Total Mass (g)	Predicted Density (g/cm ³)
WATER					1g/cm ³
Trial A					
Trial B					
Trial C					

Part 3- Let's think About It. Use complete sentences to answer the questions below.

1. Total mass is the mass of the container and its contents. Did the total mass of the canister change from Trial A to Trial B to Trial C? Explain.

2. Did the volume of the canister change during Trail A, Trial B, and Trial C? Explain.

3. Did the density of the canister change during Trail A, Trial B, and Trial C? Explain.

MAY THE FORCE BE WITH YOU-

Read the information on pages 3 and 4; it will be useful as you write a Scientific Argument.

The force of gravity is the force with which the earth, moon, or other massively large object attracts another object towards itself. By definition, this is the weight of the object. All objects upon earth experience a force of gravity that is directed “downward” towards the center of the earth. The force of gravity on earth is always equal to the weight of the object as found by the equation below:

$$F_{\text{grav}} = m * g$$

Read as, “the force of gravity is equal to mass times gravity”.

where m = mass (in kg) and g = 9.8 N/kg (on Earth)

Many students confuse weight with mass. The mass of an object refers to the amount of matter (the number of protons, neutrons, and electrons in the atoms) contained by the object; the weight of an object is determined by the force of gravity acting upon that object. Mass is related to how much stuff is there and weight is related to the pull of the Earth (or any other planet) upon that stuff.

The mass of an object is measured in kilograms (kg or 1000 grams). The mass will be the same no matter where in the universe that object is located. Mass is never altered by location, the pull of gravity, speed or even the existence of other forces. For example, a 2 kg object will have a mass of 2 kg whether it is located on Earth, the moon, or Jupiter; its mass will be 2 kg whether it is moving or not (at least for purposes of our study); and its mass will be 2 kg whether it is being pushed upon or not. Mass is determined with a balance and known objects of specific mass. In your classroom, there may be a triple beam balance or a balance scale like the one pictured below.

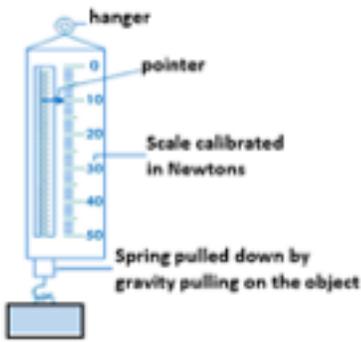
known object of specific mass



bag of peanuts

The weight of an object is measured in Newtons (N) and will vary according to where in the universe the object is. Weight depends upon which planet is exerting the force and the distance the object is from the center of the planet. Weight is dependent upon the value of g - the gravitational field strength. On Earth's surface g is 9.8 N/kg (often approximated as 10 N/kg). On the moon's surface, g is 1.7 N/kg. Your weight would be much less on the moon, but your mass would be the same. Weight can be determined with a spring scale, see images below. In Example A, gravity pulls down on the object causing the spring to stretch and the pointer to move down to show how much the spring has been stretched. In Example 2, gravity pulls down on the bag of peanuts causing the spring to compress (be pushed together). The dial on the front of the scale shows how much the spring has compressed and indicates the weight of the object.

Example A



Example B



Read and consider the information about spring scales so you will be able to demonstrate using one and explain it to the class.

The **normal force** is the support force exerted upon an object that is in contact with another stable object. For example, if a bag of peanuts is resting upon a surface, then the table surface is exerting an upward force upon the bag in order to support the weight of the bag. The normal force is what keeps the bag from falling through the table.

SOME IFs, THENs OF FORCE

Image 1- If the force of the bag resting on the table (**weight** caused by gravity), is the same as the normal force, then the forces are **balanced** and the bag will rest on the table.

Image 2- If the force of the bag is greater than the force of the table, then the forces are unbalanced and the bag will cause the table to break and fall to the floor. When all the forces are balanced again, the objects will stop moving. The normal force of the broken table will be the same as the force of gravity on the bag.

Image 3- If the force of the bag is not enough to cause it to rest on the table because the air around it is exerting an upward force on the bag, it might float off into space like a balloon. If the objects are not touching, there would be no normal force.

Image 4- If the force of hands pulling on the bag is greater than the force of gravity, then the object will be lifted.

Image 1

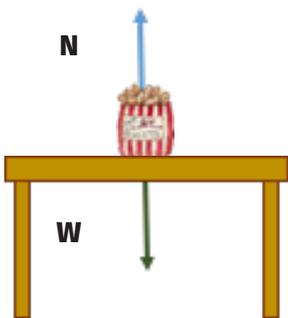


Image 2

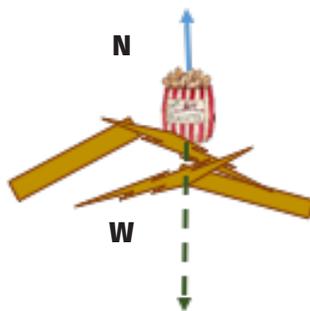


Image 3

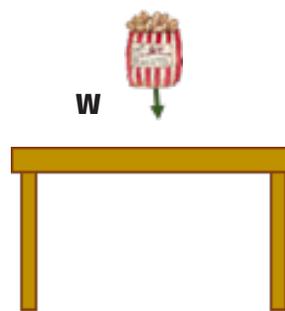
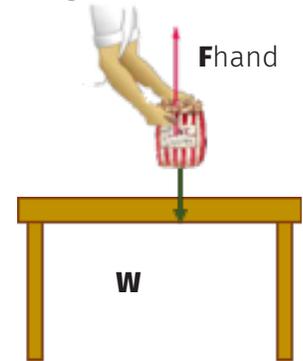


Image 4



Name: _____

Date: _____

Class Period: _____

What Makes Things Float? Lab-n-a-Bag continued

Part 4- AT SCHOOL

1. Place the items in the container as they were in Trial A, then use a balance to determine the total mass. Record the total mass in the DATA TABLE below. Repeat the process using the items in the container for Trial B and Trail C.
2. Calculate the density for each trial using the formula $D=M/V$. Show your work on a separate paper. Record the densities in the table below.

DATA TABLE 2

	Calculated Volume (cm ³) (copy data from DATA TABLE 1 on page 2)	Total Mass (grams) determined in class with a balance	Density (grams/cm ³)
WATER			1 gram/cm ³
Trial A			
Trial B			
Trial C			

3. Was the density of the containers similar to what you expected? Explain.

Part 5- Write Like a Scientist

Using information from this document, observations from the Lab-n-a-Bag experiment, specific information from your data tables, and terms like density, mass, volume, force, gravity, float, sink, and suspend, explain what caused the canister to stay at different levels in the water during Trial A, Trial B, and Trial C. Organize your thoughts in a 5-Paragraph Scientific Argument on page 6.

- Scientific argument- /'ärgyəmənt/ noun- an attempt to validate or refute a claim on the basis of reasons in a manner that reflects the values of the scientific community

Be mindful to write arguments focused on discipline-specific content:

- introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims and organize the reasons and evidence logically.
- support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
- use words, phrases and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons and evidence.
- establish and maintain a formal style.
- provide a concluding statement or section that follows from and supports the argument presented.

5-Paragraph Scientific Argument

Introduction-

Trial A-

Trial B-

Trial C-

Conclusion-

Part 6- The Writing Process- Your teacher may direct you to work in small groups for Steps 3 and 4.

- **STEP 1.** Prewriting includes thinking, taking notes, talking to others, brainstorming, outlining, and gathering information.
- **STEP 2.** Writing is putting your ideas into sentences and paragraphs (Part 5 of this assignment).
- **STEP 3.** Revising is rearranging information and including transition words, including evidence, details, and necessary content specific words, and removing unnecessary words,
- **STEP 4.** Editing is checking for repetition, clarity, grammar, spelling and punctuation.
- **STEP 5.** Publishing- You now have a 5-Paragraph Scientific Argument ready to give to the teacher.

Name: _____

Date _____

Class Period: _____

What Makes Things Float? Lab-n-a-Bag **ANSWER KEY**

S.7.PS.7 plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

S.7.PS.9 construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

Skills

- calculate the volume of a cylinder
- use information and observations to make predictions about the density of objects
- calculate density
- use evidence to support a claim

Materials needed for the Lab-n-a-Bag

- 1 sealable plastic bag large enough to contain items listed for the Lab-n-a-Bag
- Lab-n-a-Bag worksheets (folded in half to fit in the bag)
- 1 empty film canister or empty prescription vial with lid - the same container will be used for the 3 trials.
- small objects of various masses (marbles, paper clips, pennies, bolts, nuts, etc.)
- metric measuring tape

From Home

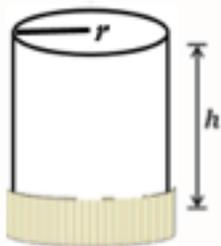
- medium sized plastic tub, bowl, pan, or sink with water (large enough for water and plastic container to float or sink)

Part 1- Procedure:

Use a (metric) measuring tape to determine the radius and height the canister, record the information in DATA TABLE 1 on page 2.

Use the equation provided in IMAGE 1 to determine the volume of the canister, record the information in DATA TABLE 1. An example of how to do the equation has been provided.

IMAGE 1



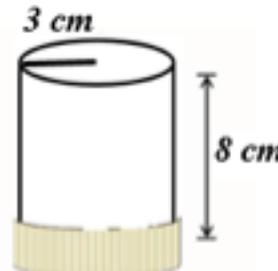
$$\text{Volume} = h \times \pi \times r^2$$

h = height of the cylinder

$$\pi (\text{pi}) = 3.14$$

r = radius of the base circle

Example



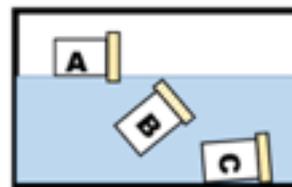
$$\begin{aligned} V &= h \times \pi \times r^2 \\ &= 8 \text{ cm} \times 3.14 \times 3^2 \text{ cm} \\ &= 8 \text{ cm} \times 3.14 \times 9 \text{ cm}^2 \\ &= 226.08 \text{ cm}^3 \end{aligned}$$

Science Grades 6-12

Part 2- Procedure:

1. Using the materials provided and similar materials from your home if needed, place some of the items inside the container and secure the lid to the container.
2. For Trial A, the canister should float on top of the water, see IMAGE 2. You may need to add or remove items from the container to get it to float on top.
3. Remove the container from the water and record the contents of the container in the space provided for Trial A, see space below.
4. For Trial B, place enough items in the canister so it will remain suspended, see IMAGE 2. Again, add or remove items from the container until the container is able to remain suspended once you let go of it.
5. Remove the container from the water and record the contents of the container in the space provided for Trial B.
6. Repeat the process for Trail C, this time placing enough items in the canister so it will sink to the bottom, see IMAGE 2.
7. Remove the container from the water and record the contents of the container in the space provided for Trial C.
8. Place the plastic container with its lid and all items used in this experiment in the plastic bag and take them to school to for the final part of this assignment. In Part 4 of this assignment will be given to you at school, you will use a balance to determine the mass of the container for each trial then.

IMAGE 2



Record the objects that were in the container for each trial.

Trial A- *(answers will vary)*

Trail B- *(answers will vary)*

Trail C- *(answers will vary)*

SOMETHING TO THINK ABOUT-

One of the most important molecules on Earth is water. Water is commonly used as a reference for physical properties. One such physical property is density.

The density of a substance or object is the relationship between the mass of the substance and how much space it takes up (volume). The equation for determining density is $d = m/v$, where m is a measure of a material's mass (e.g., in grams) which is divided by v its volume (e.g., in milliliters).

The density of water depends on the temperature of the water. The usual value for water density used in calculations is 1 g/ml, this reads as 1 gram per milliliter. Because the volume of one milliliter is equal to the volume of one cubic centimeter, the density of water may also be written as 1g/cm³ and read as 1 gram per cubic centimeter. If something is more dense than water it will sink, and if it's less dense than water it will float.

Use the information above to make predictions in Columns 4 and 5 in DATA TABLE 1 below.

DATA TABLE 1: Volume and Prediction for Mass and Density of film canisters

	1	2	3	4	5
	Radius (cm)	Height (cm)	Calculated Volume (cm ³)	Predicted Total Mass (g)	Predicted Density (g/cm ³)
WATER					1g/cm ³
Trial A	Answers may vary.	Answers may vary.	Answers may vary.	Predictions of mass should be less than the volume for trial A.	Predictions should be less than 1g/cm³.
Trial B	Answers should be the same as for Trial A.	Answers should be the same as for Trial A.	Answers may vary.	Predictions of mass should be similar to the volume for trial B.	Predictions should be 1g/cm³.
Trial C	Answers should be the same as for Trial A.	Answers should be the same as for Trial A.	Answers may vary.	Predictions of mass should be greater than the volume for trial C.	Predictions should be more than 1g/cm³.

Part 3- Let's think About It. Use complete sentences to answer the questions below.

1. Total mass is the mass of the container and its contents. Did the total mass of the canister change from Trial A to Trial B to Trial C? Explain.

Yes, the total mass of the containers changed because objects were added to the containers for Trial B and more objects were added again for Trial C.

2. Did the volume of the canister change during Trail A, Trial B, and Trial C? Explain.

No, the volume did not change, because no changes were made to the size of the containers.

3. Did the density of the canister change during Trail A, Trial B, and Trial C? Explain.

Yes, the density changed. Each time the mass increased, the density increased also.

MAY THE FORCE BE WITH YOU-

Read the information on pages 3 and 4; it will be useful as you write a Scientific Argument.

The force of gravity is the force with which the earth, moon, or other massively large object attracts another object towards itself. By definition, this is the weight of the object. All objects upon earth experience a force of gravity that is directed “downward” towards the center of the earth. The force of gravity on earth is always equal to the weight of the object as found by the equation below:

$$F_{\text{grav}} = m * g$$

Read as, “the force of gravity is equal to mass times gravity”.

where m = mass (in kg) and g = 9.8 N/kg (on Earth)

Many students confuse weight with mass. The mass of an object refers to the amount of matter (the number of protons, neutrons, and electrons in the atoms) contained by the object; the weight of an object is determined by the force of gravity acting upon that object. Mass is related to how much stuff is there and weight is related to the pull of the Earth (or any other planet) upon that stuff.

The mass of an object is measured in kilograms (kg or 1000 grams). The mass will be the same no matter where in the universe that object is located. Mass is never altered by location, the pull of gravity, speed or even the existence of other forces. For example, a 2 kg object will have a mass of 2 kg whether it is located on Earth, the moon, or Jupiter; its mass will be 2 kg whether it is moving or not (at least for purposes of our study); and its mass will be 2 kg whether it is being pushed upon or not. Mass is determined with a balance and known objects of specific mass. In your classroom, there may be a triple beam balance or a balance scale like the one pictured below.

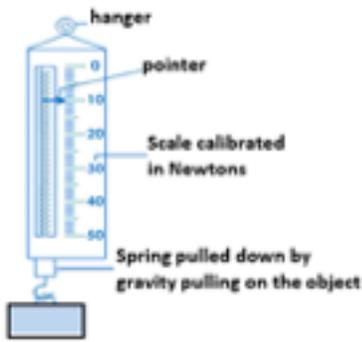
known object of specific mass



bag of peanuts

The weight of an object is measured in Newtons (N) and will vary according to where in the universe the object is. Weight depends upon which planet is exerting the force and the distance the object is from the center of the planet. Weight is dependent upon the value of g - the gravitational field strength. On Earth’s surface g is 9.8 N/kg (often approximated as 10 N/kg). On the moon’s surface, g is 1.7 N/kg. Your weight would be much less on the moon, but your mass would be the same. Weight can be determined with a spring scale, see images below. In Example A, gravity pulls down on the object causing the spring to stretch and the pointer to move down to show how much the spring has been stretched. In Example 2, gravity pulls down on the bag of peanuts causing the spring to compress (be pushed together). The dial on the front of the scale shows how much the spring has compressed and indicates the weight of the object.

Example A



Example B



Read and consider the information about spring scales so you will be able to demonstrate using one and explain it to the class.

The **normal force** is the support force exerted upon an object that is in contact with another stable object. For example, if a bag of peanuts is resting upon a surface, then the table surface is exerting an upward force upon the bag in order to support the weight of the bag. The normal force is what keeps the bag from falling through the table.

SOME IFs, THENs OF FORCE

Image 1- If the force of the bag resting on the table (**weight** caused by gravity), is the same as the normal force, then the forces are **balanced** and the bag will rest on the table.

Image 2- If the force of the bag is greater than the force of the table, then the forces are unbalanced and the bag will cause the table to break and fall to the floor. When all the forces are balanced again, the objects will stop moving. The normal force of the broken table will be the same as the force of gravity on the bag.

Image 3- If the force of the bag is not enough to cause it to rest on the table because the air around it is exerting an upward force on the bag, it might float off into space like a balloon. If the objects are not touching, there would be no normal force.

Image 4- If the force of hands pulling on the bag is greater than the force of gravity, then the object will be lifted.

Image 1

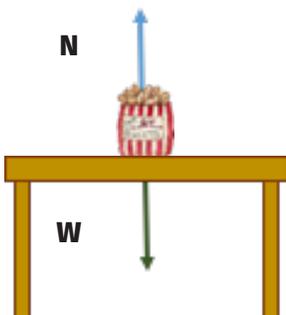


Image 2

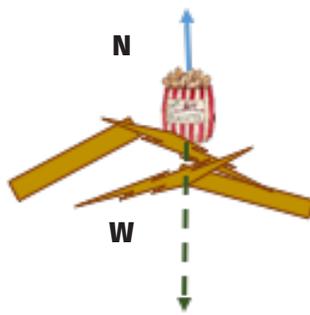


Image 3

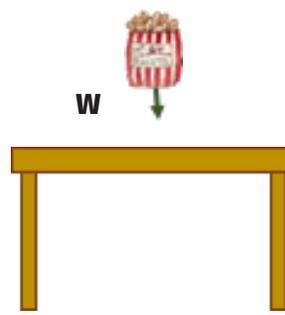
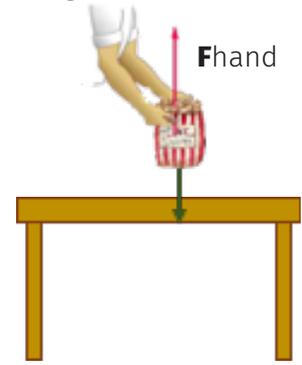


Image 4



Name: _____

Date: _____

Class Period: _____

What Makes Things Float? Lab-n-a-Bag continued

Part 4- AT SCHOOL

1. Place the items in the container as they were in Trial A, then use a balance to determine the total mass. Record the total mass in the DATA TABLE below. Repeat the process using the items in the container for Trial B and Trial C.
2. Calculate the density for each trial using the formula $D=M/V$. Show your work on a separate paper. Record the densities in the table below.

DATA TABLE 2

	Calculated Volume (cm ³) (copy data from DATA TABLE 1 on page 2)	Total Mass (grams) determined in class with a balance	Density (grams/cm ³)
WATER			1 gram/cm ³
Trial A	Answer should be the same as on Table 1.	Mass should be less than the volume for trial A.	Density should be less than 1g/cm³.
Trial B	Answer should be the same as on Table 1.	Mass should be the same as the volume for trial B.	Density should be 1g/cm³.
Trial C	Answer should be the same as on Table 1.	Mass should be greater than the volume for trial B.	Density should be more than 1g/cm³.

3. Was the density of the containers similar to what you expected? Explain.

Answers will vary. Look for an understanding of, "If something is more dense than water it will sink, and if it's less dense than water it will float."

Part 5- Write Like a Scientist

Using information from this document, observations from the Lab-n-a-Bag experiment, specific information from your data tables, and terms like density, mass, volume, force, gravity, float, sink, and suspend, explain what caused the canister to stay at different levels in the water during Trial A, Trial B, and Trial C. Organize your thoughts in a 5-Paragraph Scientific Argument on page 6.

- Scientific argument- /'ärgyəmənt/ noun- an attempt to validate or refute a claim on the basis of reasons in a manner that reflects the values of the scientific community

Be mindful to write arguments focused on discipline-specific content:

- introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims and organize the reasons and evidence logically.
- support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
- use words, phrases and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons and evidence.
- establish and maintain a formal style.
- provide a concluding statement or section that follows from and supports the argument presented.

5-Paragraph Scientific Argument

Introduction- ***Students should introduce the argument saying they will use evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.***

Trial A- ***Students should describe the total mass of Trial A and the forces which caused the container to float. They should include information about the forces being balanced when the container was floating on top of the water (gravity pulling down, the water pushing up)***

Trial B- ***Students should describe the total mass of Trial B and the forces which caused the container to be suspended in the water. They should include information about the forces being unbalanced when gravity pulled the container down deeper in the water and how the forces were balanced when the container was suspended the middle of water.***

Trial C- ***Students should describe the total mass of Trial C and the forces which caused the container to sink to the bottom. They should include information about the forces being unbalanced when the container sinking in the water and how the forces were balanced when the object settled to the bottom.***

Conclusion- ***Student summaries statements should address: an object's motion depends on the sum of the forces on the object and the mass of the object and gravitational interactions are attractive and depend on the masses of interacting objects.***

Part 6- The Writing Process- Your teacher may direct you to work in small groups for Steps 3 and 4.

- **STEP 1.** Prewriting includes thinking, taking notes, talking to others, brainstorming, outlining, and gathering information.
- **STEP 2.** Writing is putting your ideas into sentences and paragraphs (Part 5 of this assignment).
- **STEP 3.** Revising is rearranging information and including transition words, including evidence, details, and necessary content specific words, and removing unnecessary words,
- **STEP 4.** Editing is checking for repetition, clarity, grammar, spelling and punctuation.
- **STEP 5.** Publishing- You now have a 5-Paragraph Scientific Argument ready to give to the teacher.

Reading Grade 3

Expert Pack: Saving the Tropical Rainforests

Submitted by: Whitman School, Milwaukee Public Schools

Grade: 3

Date: February 2016

Topic/Subject
Saving the Tropical Rainforest
Texts/Resources
Book(s) <ol style="list-style-type: none">1. <i>The Rainforest Grew All Around</i>
Articles <ol style="list-style-type: none">1. "35 Tropical Rainforest Facts"2. "Amazon Rainforest Deforestation Shows Positive Trends"3. "Can the Amazon be Saved?"4. "Kids! 10 Easy Ways YOU Can Help Save the Rainforests"5. "The Mysterious Troll-Haired Insect Discovered in South American Rainforest"6. "Why Save the Rainforest?"
Video <ol style="list-style-type: none">7. "The World of Plants: Plants and People" (Discovery Ed)
<p>Each expert pack contains a variety of selections grouped to create as coherent and gradual a learning process for students as possible, generally beginning with lower levels as measured by quantitative and qualitative measures, and moving to more complex levels in the latter selections. This graduated approach helps support students' ability to read the next selection and to become 'experts' on the topic they are reading about.</p> <p>Refer to annotated bibliography on the following pages for the suggested sequence of readings.</p>
<p>Rationale and suggested sequence for reading:</p> <p>The article, "Mysterious Troll-Haired Insect Discovered in South American Rainforest," is the first text in this set to capture student's attention. The read aloud, <u>The Rainforest Grew All Around</u>, introduces the characteristics of the rainforest, including animals, plants, ecosystem and habitats. The next resource is an article that lists 35 facts about the rainforest, which could be presented as, "A Fact of the Day," throughout the unit and displayed in the classroom as public notes. The next resource is a video entitled, "The World of Plants: Plants and People," which depicts how the resources found in the rainforest contribute to human life. The materials shift focus to issues of diminishing rainforests. The article, "Can the Rainforest be Saved?" raises awareness of the disappearance of rainforests due to deforestation. Next, the article, "Why Save the Rainforest?" explains how the rainforest touches all of our lives. The article, "Amazon Rainforest Deforestation Shows Positive Trends" discusses the positive effects of the establishment of the Amazon Fund by the Brazilian Government. The final resource is an article titled, "Kids! 10 Easy Ways YOU can Help Save Rainforests." This article lists 10 kid-friendly ways students can help the cause. The additional resources listed may be used as a teacher's guide including class and school projects to protect and defend the rainforest. They include: "Protect an Acre," "Start a Rainforest Student Group," "Make a Difference Through Service Learning," along with teaching materials and information about an organization started by two 9- year-old girls called, "Kids Saving the Rainforest."</p>
<p>The Common Core Shifts for ELA/Literacy:</p> <ol style="list-style-type: none">1. Regular practice with complex text and its academic language2. Reading, writing and speaking grounded in evidence from text, both literary and informational3. <i>Building knowledge through content-rich nonfiction</i>
<p>Though use of these expert packs will enhance student proficiency with most or all of the Common Core Standards, they focus primarily on Shift 3, and the highlighted portions of the standards below.</p>



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