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Introduction

Dear Educator,

Thank you for choosing our Fractions video conference. As you prepare for this experience, it is important that you consider how these programs will fit into your instruction. The goal of this experience is to enhance your instruction with dramatic visuals, hands-on manipulatives, unique problem solving opportunities, and clever, engaging applications for all learners.

The intent of this teacher manual is to help you integrate this program with your own curriculum, and to help you prepare for an optimal video conference experience.

Our Fractions video conference series consists of three separate programs, designed for different points in your instruction. They are intended for Grade 3, and are carefully aligned with the New York State Common Core Learning Standards.

It is my hope that you and your students will greatly enjoy this program, and that it will become part of your instruction for years to come.

Sincerely,

Andy Raab

Andy Raab
Monroe #1 BOCES

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Preparing For Your Video Conference

Preparation

This page will detail what the teacher needs to do to get ready for the video conference.

1. **Book Video Conference with Debra Croce**
2. **Contact Debra Croce to set up a test call**
3. **Conduct Test Call (see below)**
4. **Review Conference procedure with Students**
5. **Review the Basics of Video Conferencing (Next Page)**
6. **Set Up Kit And Program-Specific Materials**
7. **Print Copies of the Workbook**

IP and Test Call

Be sure to contact Debra Croce at Debra_Croce@boces.monroe.edu or (585) 249 – 7063, to provide us with your I.P. number, or extension. **If you are outside Monroe County, a test call is mandatory.** Please set one up with us! Let's not wait until the morning of the conference. Our I.P. number is 199.190.224.186 extension 5851318. (For calls within Monroe County, it is 10.0.140.184 extension 5851318)

Technical Support

For more technical support, please call Dana Bowers or Tim Poland at (585) 383-6695, or email him at dana_bowers@boces.monroe.edu and tim_poland@boces.monroe.edu

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The Basics of Video Conferencing

How to Set Up Your Room and Camera

Camera placement goes a long way in enhancing my ability to interact with your class. **The higher up you place the camera, the better I can see the back row.** If you can, experiment before we go live, and try to set some presets that allow you to zoom in on sections of the room.

Lighting

Avoid backlighting! Open windows with sunlight make it difficult to see faces. Obviously, you will want to be able to see me if you are using a projector, but try not to dim your lights too much, or I won't be able to see your class. Try to find the right balance in lighting.

Sound and Microphones

Try to put your microphone in a central area, ***away from the speakers***.
We like to engage the students by name and have fun as much as possible. We will ask them to tell me their names. Please let them know that only the student who is asked should say their name clearly and loudly. Many responses at once come through as a mumble. ***Please feel free to jump in and help me if you see me struggling with a name.*** Remind the students that the room microphone will pick up whispering and shuffling and side conversations.

Hands-On Materials

Hands-On manipulatives are a fundamental learning tool for our programs. Distribute any materials **prior to** the connection. We will call to use them at a moment's notice, so they should be kept on student desks. ***However, they should not be handled until directed to do so.*** Prior to the conference, establish rules of hands-on use. I will prompt them to fold their hands or sit on them at times when materials shouldn't be used. Help me with this management, so that the materials are used only at appropriate times, and are not a distraction.

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The BoSAT Kit

There is more in the kit than you will need. The kit is built to supply materials for Sessions I, II, and III, but you will not use all materials for each session.

What's Needed For Each Program

We have found that giving students the entire contents of the kit are overwhelming. The search for needed parts takes up time, gets noisy, and destroys momentum of the program. For that reason, we **strongly** recommend you pre-select and set out **only** the pieces specific to the program for which you have signed up. On the pages following this one are three documents that show precisely what materials are needed for each program.

Printing the Workbooks!!!

Shipping printed workbooks causes shipping costs to rise exponentially. Therefore, we ask that you download the files from the workbooks and print them yourselves. **IMPORTANT: Each page is scaled to work precisely with the plastic tiles. Therefore, when printing, DO NOT change the scaling to fit to page; print them as they are.** You can always check by placing the blue One-Whole plastic tile on the fraction bars or strips in the book. It should be the exact same length and fit exactly.

Clean Up

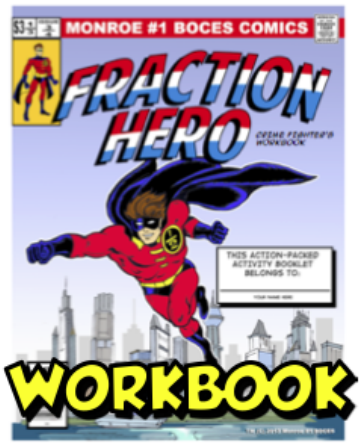
The team at BoSAT does an incredible job of refurbishing each kit so that it is in perfect condition and each part carefully inventoried, ready for use for you and your students. **We ask that you take the time to pay it forward, and involve the students in cleaning up the kits once you are finished with them.** This is an expensive kit to build, and we can keep our program costs down if we don't have to order replacement parts. There is a sheet you can share with the students, showing them exactly how many of each colored tile they should have.

SESSION 1

MATERIALS NEEDED

ARRANGE NEATLY ON DESK

TILES



PIES

2 cut out fraction strips

Fraction Mat

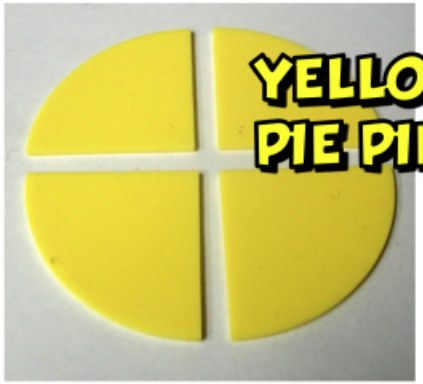
Clay

Plastic Knife

MATERIALS NEEDED for Session 2

ARRANGE NEATLY ON DESK

WORKBOOK 2



YELLOW PIE PIECES

BROWN TILES

ORANGE TILES

YELLOW TILES

SESSION 3

MATERIALS NEEDED for Session 3

TILES

ARRANGE NEATLY ON DESK

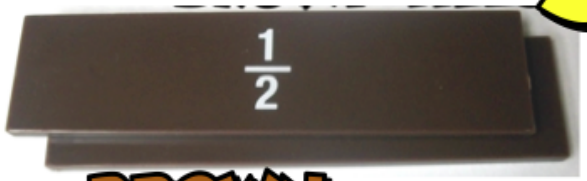
PINK

ORANGE

YELLOW

GREEN

RED



BROWN

WORKBOOK 3

PIES

PINK

ORANGE

YELLOW

BLUE

BROWN

RED

GREEN

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FREQUENTLY ASKED QUESTIONS

1. ***How long is the show?*** The anticipated run time of the conference is 1 hour. Many factors can affect this, such as students' readiness to respond quickly and clearly. You can help by coaching your students in video conference etiquette prior to the conference. We will do our best to keep things moving at a steady clip, but please allow for an extra 10-15 minutes if needed.

2. ***What's the Tone?*** We will try to have lots of fun and laughs, so students should know that this is a low-risk, feel good activity. If they are ready to work hard and play along, the conference will be much richer and fulfilling for everyone. Remind them that this is stress-free, and it's okay to make mistakes in the "Math Lab". At the same time, I will do my best to challenge them, and so I'd like the expectation of readiness to think and problem solve be reinforced. It's not simply play time.

3. ***How Big Should the Fraction Strips Be?*** The Fraction Strips included in the student workbook are specially designed to be the same size as the fraction tiles in the kit. **When you print the workbook from our website, do not change the scale to fit the paper**! They are already scaled! When they are photocopied, it is important that this scale be preserved, so that the tiles line up with the strips, as well as the number lines which will be derived from them. **After you print a copy, test fit it with the tiles to make sure they line up**. To save time during the conference, you may want to have your students carefully cut out the fraction strips before the conference.

4. ***What if my class doesn't finish the whole workbook?*** We never do! There's more in the book than we can possibly do in one hour. Use the bonus or unfinished problems as reinforcements or mini-assessments. *We also include a post-conference homework/assessment for each of the three programs.*

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Common Core Learning Standards

Overview

When New York State released the Grade 3 Module 5 for the Common Core Mathematics curriculum, the recommended program detailed a 35-day module in which "students extend and deepen second grade practice with "equal shares" to understanding fractions as equal partitions of a whole (2.G.3). Their knowledge becomes more formal as they work with area models and the number line."

The NYS Common Core Mathematics Curriculum was carefully referenced in the creation of this program. In designing 3 one hour programs, 3 key points from the Grade 3 Module 5 needed to be clarified as learning objectives. The Grade Level Standards on which we focus are as follows:

3.NF.1: Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.

3. NF.2: Understand a fraction as a number on the number line; represent fractions on a number line diagram.

3.NF.3: Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

Each of these Standards, then, became the basis for each of our programs in Fractions for Grade 3.

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Program 1: Fractions As Sharing

Background

This program works with Topic A and B of Module 5.

Standards: 3.G.2, 3.NF.1, 2.NF.3c, 3.G.2

Among the learning objectives are:

•Partition a Whole Into Equal Parts, identifying and counting Unit Fractions using concrete models, fraction strips, and pictorial area models (Lesson 1, 2, 3)

•Represent and Identify Fractional Parts of Different Wholes (Lesson 4)

•Partition a Whole into Equal Parts to identify the Unit Fraction, and build Non-Unit Fractions Less than One from Unit Fractions (Lessons 5 and 6)

•Identify and Represent Shaded and Non-Shaded Parts of One Whole as Fractions. (Lesson 7)

•Represent Parts of One Whole as Fractions with Number Bonds (Lesson 8)

•Build and Write Fractions Greater than One Whole Using Unit Fractions (Lesson 9)

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Program 2: Fractions and Number Lines

Background

This program works with Topics D and E of Module 5.

Standards: 3.NF.2a, 3.NF.2b, 3.NF.3c, d.NF.3d, 3.NF.3a, 3.NF.3b

Among the learning objectives are:

•Place Unit Fractions on a Number Line with Endpoints 0 and 1 **(Lesson 14)**

•Place Any Fraction on a Number Line with Endpoints 0 and 1 **(Lesson 15)**

•Practice Placing Various Fractions on the Number Line **(Lesson 17)**

•Compare Fractions and Whole Numbers on the Number Line by Reasoning About Their Distance From 0 **(Lesson 18)**

•Understand Distance and Position on the Number Line as Strategies for Comparing Fractions **(Lesson 19)**

•Recognize and Show That Equivalent Fractions Refer to the Same Point on the Number Line **(Lesson 21)**

•Generate Simple Equivalent Fractions by Using Visual Fraction Models (E.g., Fraction Strips) and the Number Line (Lesson 22)

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Program 3: Equivalence and Comparing

Background

This program works with Topics E and F of Module 5.

Standards: 3.NF.3a, 3.NF.3b, 3.NF.3c, 3.NF.3d

Among the learning objectives are:

•Recognize and Show That Equivalent Fractions Refer to the Same Point on the Number Line **(Lesson 21)**

•Generate Simple Equivalent Fractions by Using Visual Fraction Models (E.g., Fraction Strips) and the Number Line (Lesson 22)

•Explain Equivalence by Manipulating Units and Reasoning About Their Size (Lesson 27)

Compare Fractions with the Same Numerator Pictorially (Lesson 28)

Compare Fractions with the Same Numerator Using <, >, or = and use a Model to Reason About Their Size (Lesson 29)