Print, Cut, and Fold

Creative technology projects for

MATH

The following pages contain a sample section from the book.

Student Activity
Reasonable Estimations Pocket Portfolio

Grade Level & Content Area(s):
Mathematics (Grades 3-8)

On CD-ROM:
ReasonableEstimationsPS.pdf
PocketPortfolioTemplate.ppt
PocketPortfolioIS.pdf
StudyCardsTemplate.ppt
StudyCardsIS.pdf

Lesson Overview:
In this two-part lesson, students will create a stack of review cards along with a two-pocket portfolio. The portfolio pockets will be labeled as "reasonable" and "unreasonable." The review cards, with text and graphics, will each contain an observation about a number of items and an estimated total count. Students will classify each as being either "reasonable" or "unreasonable" by placing each in the appropriate portfolio pocket. Students will then trade their portfolios for further practice in this classification.

Software or Special Materials/Supplies:
PowerPoint
Scissors
Glue stick, staples, or tape

Standards:
NCTM Standards (Grades 3-5)
  Number & Operations
    o develop and use strategies to estimate the results of whole-number computations and to judge the reasonableness of such results
    o develop and use strategies to estimate computations involving fractions and decimals in situations relevant to students' experience

NCTM Standards (Grades 6-8)
  Number & Operations
    o develop and use strategies to estimate the results of rational-number computations and judge the reasonableness of the results

Notes to Teacher:
This activity results in two separate products that are used in conjunction with one another to allow students to practice classification of numbers. The first product is the pocket portfolio – a two-pocket folder. Students will create review cards to insert into these pockets. The creation of the review cards is identical to the study card activities in this book.

Students will label each pocket of the portfolio with the words and symbols corresponding to "reasonable" and "unreasonable." Decide on the type of numbers for which students should create problems and estimates on study cards – there should be an approximately equal split between "reasonable" and "unreasonable" problems. In addition to whole numbers, you may wish to consider the following types of numbers to be included:
- fractions
- improper fractions
- mixed numbers
- decimals
- percentages
- absolute values

Instruct students to create a sentence and insert clip art to accompany the number (ex: "The movie theater has 21 rows of 11 seats each.").

Students should then enter an estimate on the bottom of the card. Some estimates should be reasonable and some should not (follow the planning sheet).

After printing, student should cut the cards out and classify them using the pocket portfolio.

Upon completion of the activity, instruct students to shuffle their cards and trade portfolios with another student. Allow time for students to classify the cards and then use peer checking to assess their classification.

The movie theater has 21 rows of 11 seats each.

Estimation = 210 seats

Modifications or Extensions:
For lower level students, you may wish to forgo the creation of the pocket portfolio/folder. The true curricular value is in the creation of the study cards with text and graphics and in the actual classifying of the estimations thereafter. Instead, you may wish to give these students ready-made note card holders or just plain envelopes (see the instructions for creating study cards).

Reasonable Estimations Pocket Portfolio
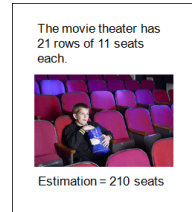
Name:_____ **Date:** _____

You will be creating a stack of review cards along with a two-pocket portfolio. The portfolio pockets will be labeled as "reasonable" and "unreasonable." The review cards, with text and graphics, will each contain an observation about a number of items and an estimated total count. You will classify each as being either "reasonable" or "unreasonable" by placing each in the appropriate portfolio pocket. You will then trade your portfolios for further practice in classifying reasonable estimations.

The movie theater has 21 rows of 11 seats each.

Estimation = 210 seats

Planning Page Directions:
Write ten sentences that include some calculation (ex: "The movie theater has 21 rows of 11 seats each."). Next, create either a reasonable or an unreasonable estimation for each. List search terms that you can use to find an image that illustrates each sentence.

Reasonable Estimations		
Reasonable Estimation Sentences	Estimation	Image Search Term(s)
1.		
2.		
3.		
4.		
5.		

Unreasonable Estimations		
Unreasonable Estimation Sentences	Estimation	Image Search Term(s)
1.		
2.		
3.		
4.		
5.		

Computer Directions:
Using this planning sheet and the template provided by your teacher, create a pocket portfolio labeled "reasonable" and "unreasonable." You will also create study cards that have reasonable and unreasonable sentences and graphics that illustrate the sentences. You will classify the estimation on the cards as being either reasonable or unreasonable by placing them in the appropriate pocket.