

# Using Geometer's Sketchpad<sup>®</sup> to Help ELL Students

Ready-made sketches!

Mathematics for English Language Learners  
Conference 2006

Bill Jasper & MaryE Wilkinson

In order to view the examples we are showing you today, the program must be loaded on your computer. If you already own the program and would like to have these examples, we can send them as email attachments.

Bill: [jasper@shsu.edu](mailto:jasper@shsu.edu)

MaryE: [MaryE.Wilkinson@lamar.edu](mailto:MaryE.Wilkinson@lamar.edu)

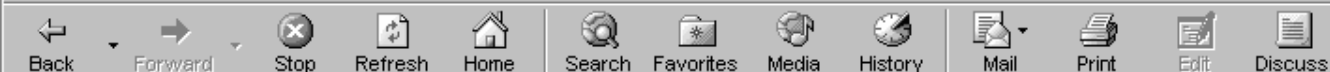
## Ready-made sketches!

We have created most of these examples, but there are many available online. Some even include copy-ready activity sheets and/or teacher notes.

We always start at [keypress.com](http://keypress.com)

But you can also just type “Sketchpad” into Google (well, if you want lots and lots of hits).

**NOTE:** Beware! Some sites are not free!

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How to Order  
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101 Project Ideas  
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## Sketchpad® Links

These links take you to other sites discussing *Sketchpad* or presenting Dynamic Geometry® activities, lessons, and ideas. For information about print-based resources, consult the [Bibliography](#).

Links to sites on external servers do not imply any endorsement by KCP Technologies or Key Curriculum Press. We have chosen sites (some of which are commercial) that are managed in a professional manner, and we try to ensure that links relate to the stated subject matter.

As you know, Web site addresses do change. If you encounter a problem with any of these links, please [let us know](#).

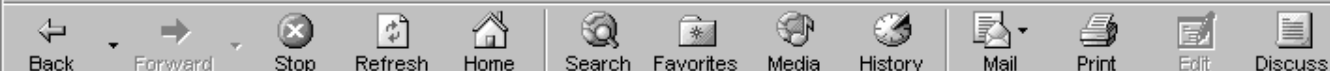
If you'd like to contribute a link to this guide, please send a message to [sketchpad@keypress.com](mailto:sketchpad@keypress.com).

These links have been divided into the following categories:

- [Classroom Activities](#)
- [Geometry: Explorations](#)
- [Geometry: Constructions](#)
- [Beyond Geometry](#)
- [JavaSketchpad](#)
- [Research](#)

### A Note About These Links

This is an arbitrary and selective list of online *Sketchpad* resources. Type "Geometer's Sketchpad" into your favorite search engine and you'll find thousands more! Many of the links here point to sites containing large sub-collections of *Sketchpad* material. These "anthology" sites are marked in the list with a red asterisk (\*).

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## Classroom Activities

*The Geometer's Sketchpad®* is used in classrooms at all levels of the mathematics curriculum. This page gathers information about field-tested classroom activities (including teacher notes, student worksheets, and/or *Sketchpad* documents), all ready for immediate classroom use. Some of the activities are available in print, some are available free for download, and some are available through third-party links. If you would like to receive occasional updates of new activities here and elsewhere on this site, sign up for the [Sketchpad mailing list](#). Unless otherwise noted, all activities are designed for use with *Sketchpad™* version 4.

The activities are arranged here by topic:

- [Activity Books from Key Curriculum Press](#) (including downloadable activities)
  - [Exploring Geometry](#)
  - [Exploring Algebra](#)
  - [Exploring Precalculus](#)
  - [Exploring Calculus](#)
  - [Shape Makers](#)
  - [Geometry Activities for Middle School Students](#)
  - [Geometry in Action](#)
  - [Exploring Conic Sections](#)
  - [Pythagoras Plugged In](#)
  - [Rethinking Proof](#)
- [Classroom Activities and Resources from KCP Technologies](#)
  - [Sketchpad for Grades 3-5](#) (downloadable activities)
  - [Sketchpad for Connected Mathematics Project Years 6 and 7](#) (downloadable activities)
  - [The First Week of Calculus](#) (downloadable activities)
  - [Dynamic Mathematics Visualization for Young Learners](#) (downloadable sketches)
  - [101 Project Ideas](#) (downloadable sketches)
- [Links to Other Classroom Activities](#)

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home : general resources : classroom activities : young learners : activities 3to5


### Sketchpad Activities for Young Learners: Grades 3-5 (continued)

Back to the [Introduction](#)

On this page you can read about activities, download individual sketches (by clicking on their picture), or [download the entire collection of sketches, handouts and Teacher Notes](#). You are free to photocopy these activities for use in your own classroom. You are also free to make changes to the sketches themselves to suit your own needs; simply save the ones you want to change under a different filename. The activities notes and sketches are Copyright 2003 KCP Technologies. All other rights reserved.

These sketches require Sketchpad 4.0 or later. Many of these documents contain multiple pages. If you have difficulty downloading these sketches individually by clicking on them, consider downloading the entire collection, or right-click (Windows) or Ctrl+click (Mac) their links and choose **Download Link To Disk** or its equivalent. For more information, read about [configuring your web browser](#).

**Standard:** Number & Operations, Algebra, Problem solving



**Grouping I:** The goal of this activity is twofold. First, it introduces students to Sketchpad's most important tools and menu commands. Second, it helps students appreciate how grouping objects can make them easier to count, and how the same quantity of objects can be grouped in different ways. In addition, it will help you developed a classroom vocabulary that can be used in Grouping II. **Grouping II:** The idea of this activity is for students to appreciate how grouping objects can make them easier to count, and how the same quantity of objects can be grouped in different ways. Younger students might be encouraged to think about how to group objects "evenly," that is, into group sizes that are factors of the total number of objects. The idea that  $n$  groups of  $m$  is the same as  $m$  groups of  $n$  (the *commutative property of multiplication*) can also be explored. Older students might be encouraged to explicitly consider the remainder objects--that is, the number of objects left over after they have been divided into certain group sizes.

**Sketch:** Nick Jackiw (based on an idea by Spario Soon); **Activity:** Nathalie Sinclair

**Standard:** Number & Operations; Algebra; Problem solving

# Dynamic Mathematics Visualization for Young Learners: Sketchpad in Grades 3-8.

A Working Conference for Researchers, Curriculum Developers, and Educators. 7-9 February 2003


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## Sketches

The following downloadable Sketchpad documents are contributions from conference participants. Unless otherwise noted, these sketches require Sketchpad 4.0 or later. Many of these documents contain multiple pages, in which case the previews show only a few of the pages. These files remain the property of their respective authors. While you may download and use them for evaluation purposes, please contact their authors directly for permission to duplicate or disseminate. (Authors e-mail addresses are included in the sketch documents.)

If you have difficulty downloading these documents by clicking on them, right-click (Windows) or ctrl-click (Mac) their links and choose **Download Link To Disk** or its equivalent. For more information, read about [configuring your Web browser](#).

**Titles:** [hopping.gsp](#) (Sketchpad document), [msmathsketches.gsp](#) (Sketchpad document), [Jeff.ppt](#) (Powerpoint presentation)

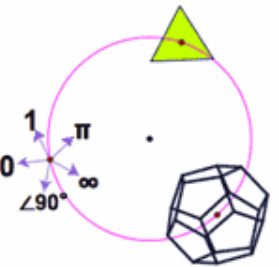


**Pages:** (hopping.gsp) Triangle base; 2. Segment to unit; (msmathsketches.gsp) 1. tease rect at 12; 2. fixperimtritrance; 3. change precision units; 4. swinging; 5. Basic tris

**Author:** Jeff Barrett

Click here for [related abstract](#).

**Title:** [DGSituations.gsp](#) (Sketchpad document)



**Pages:** 1. Title; 2. What is DG?; 3. DG/Student View; 4. Drawing vs. Constructing; 5. Conjecturing; 6. What is DG? (redux); 7. Mean vs. Median; 8. Curriculum & Student Matrix; 9. Gallery; 10. Adding Integers; 11. Area Multiplication; 12. Area Estimation; 13. Coordinate Systems; 14. Number Patterns; 15. Fibonacci; 16. Equivalent Fractions; 17. Fraction Fish; 18. Factors; 19. AntMarch; 20. Conclusion

**Authors:** Nicholas Jackiw, Steven Chanan, Nathalie Sinclair (Fraction Fish based on ideas by Piet Human)

Click here for [related abstract](#).

**Title:** [Flatland](#) (JavaSketchpad web site)



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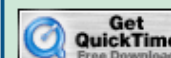
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QuickTime 6 recommended

## The Geometer's Sketchpad

The Geometer's Sketchpad® from Key Curriculum Press® lets you construct figures from simple textbook diagrams to working models of the Pythagorean Theorem, perspective drawings, tessellations, fractals, animated sine waves, and more.



### A. Getting Started

	DURATION	SIZE
1. <a href="#">What is the Geometer's Sketchpad?</a>	2:03	888K
2. <a href="#">Using the select, point and circle tools</a>	3:06	528K

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4. <a href="#">Using the text and custom tool</a>	2:06	560K
5. <a href="#">Labeling objects</a>	3:25	704K
6. <a href="#">Using undo and redo</a>	1:13	256K
7. <a href="#">Visiting Sketchpad's web site</a>	1:54	704K
8. <a href="#">Using help</a>	1:24	500K