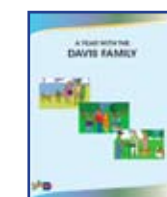
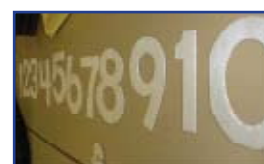
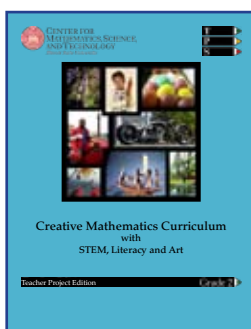
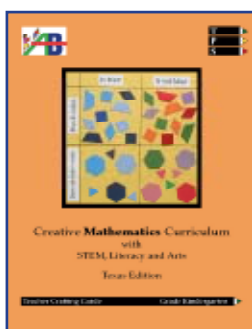
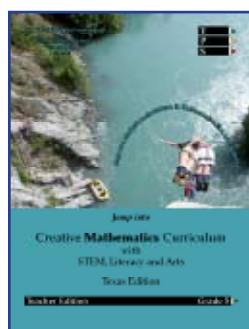


# Creative Mathematics Curriculum

with

## STEM, Literacy and Arts

### TEXAS Edition K - 8.



Fully aligned to the  
Texas Essential Knowledge and Skills for Mathematics



# TPS Publishing Inc. and Partners



TPS Publishing Inc. has been created and is owned predominantly by experienced teachers, specifically to improve the success of each student.

TPS believe that a strong teacher/parent/student relationship is integral to obtaining the best results by helping students to master the content and skills required by the Texas Essential Knowledge and Skills.



AB Curriculum has a vision to provide access to education for all students, for them to really enjoy learning and to become life long learners.

AB Curriculum help students to access learning through their fun, action based, and fully inclusive crafting and reader activity book materials.



The mission of CeMaST is to stimulate, conduct and support integrative science, technology, engineering and mathematics education activities. CeMaST has been building a national reputation for developing and supporting highly successful STEM activities and education.



Invicta Education has a product range, which takes children from familiar themes into new learning opportunities and experiences. Invicta products encourage students to observe and identify, investigate and collect, record, organize and analyze. Most importantly students are encouraged to take action for themselves.



Archway is a phonetic scheme designed to help people of all ages to read, write and spell. Archway uses games, DVDs, books, cards and exercises to help students develop their language skills.

***All major components of the program are available in both print and digital format.***

# TPS Publishing Inc. and Partners



Ellison Educational Equipment is the pioneer and global market leader of die cutting products. Ellison take pride in delivering best of class, high quality products to meet the ever-changing demands of both the educational and arts industry.

Now generations of educators are able to tap into and leverage Ellison's award-winning education products and curriculum for their classroom teaching needs.



Musically Aligned is committed to providing valuable instructional resources that improve academic stimulation and achievement through the use of music.

The creators combined their passion for music and learning to create Musically Aligned, a standards-based educational music production and resource company that aligns original songs and materials to state academic standards.



Digital Frog International are an innovative and enthusiastic software company, dedicated to creating high-quality educational, multimedia programs with an ecological focus. Digital Frog International aim to make a difference to the way people view the natural world. The computer-based learning tools encourage a lifelong interest in, and respect for, the world around us. Providing accurate, detailed information in an interesting and engaging way.



Avimba's fantastic software enables the creation of a secure teacher, parent, student circle in which student work can be stored. Using this software all student work can be uploaded into a secure communal network in which teachers and parents can review the work, make comments and keep track of student progress. Students can also learn using the fun and educational Avimba apps.

# Introduction

TPS Publishing Inc. and partners have constructed the 'Creative Mathematics Curriculum with STEM, Literacy and Arts' program with the intent to enhance the Mathematics learning and teaching in schools in your state.

Through adhering to the Texas Essential Knowledge and Skills break outs for Mathematics, the program presents Mathematics as a way of thinking and learning, incorporating literacy skills necessary for academic success in acquiring Mathematics as an academic language.

The program has been built through a collaborative effort by several companies, each of which have expertise in Mathematics instructional design. They share a commitment to activity-based instruction. The diversity of writers and perspectives ensures that the material is inclusive.

We provide three key inquiry based component areas;

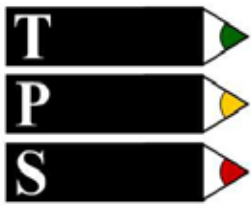
- **TPS Publishing Inc.** - Traditional lesson plans using manipulatives, provided by Invicta Education, exactly aligned to each TEK.
- **STEM project based learning cycles** – Illinois State University provides wonderful activities, via learning cycles, especially useful as a visual assessment tool and for advanced learners covering a group of TEKS including all Mathematical Process Standards.
- **Crafting projects** – Aligned to each of the K-5 TEKS. TPS with Action Based Curriculum provides nasen approved projects which are a by standard visual assessment tools, and are inclusive but particularly useful for far below grade students, ELL and special education users.

Each set of lesson plans complement each other; together they cover the full criteria of your state requirements and offer a wonderful activity-based learning program with all writers basing content on grade specific literacy materials.

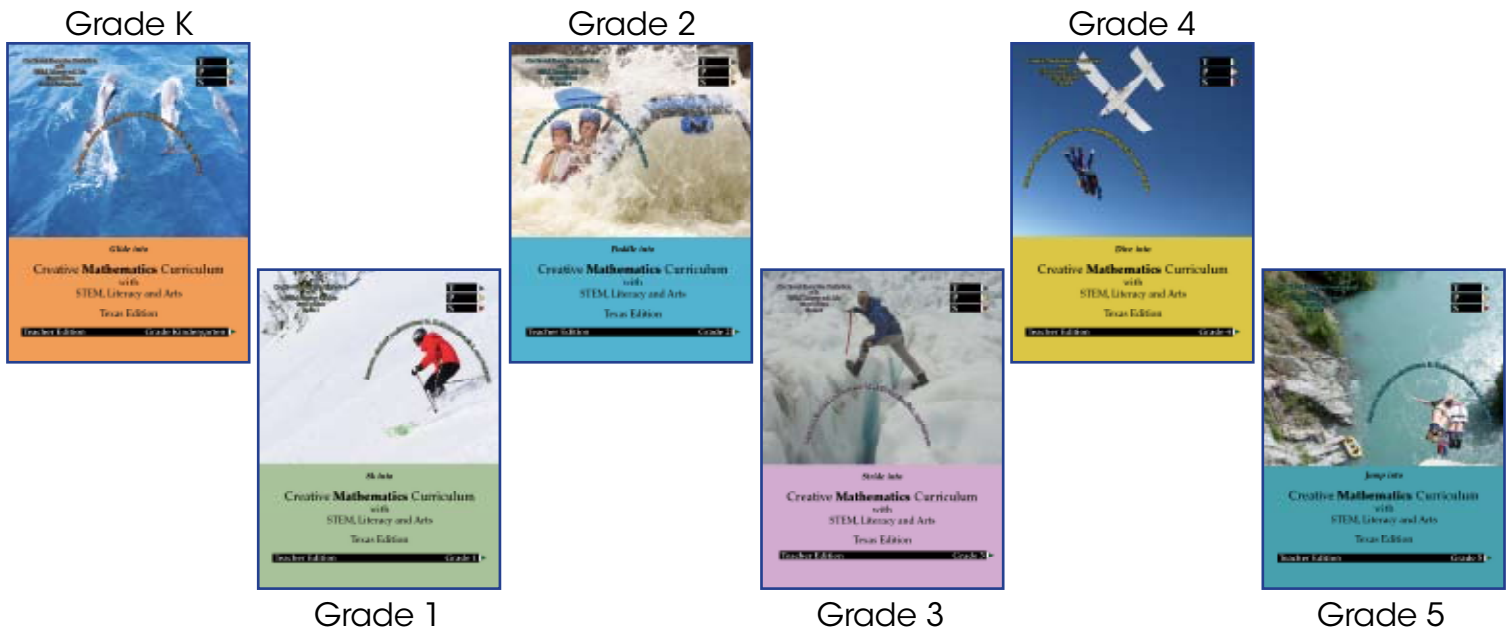
Our team utilize a 'by standard, strand and or learning cycle structure', which engages students in active interaction with the content. This approach is based on the concept that we all learn best by doing, rather than simply listening or watching.

Our Professional Learning Opportunities also utilize the "learn by doing" philosophy and methodology. Participants understand the "how" and the "why" of the pedagogy by experiencing and engaging in Mathematics.





# Teacher Textbook - Traditional Lesson Plans



The traditional textbooks provide the building blocks of our program and we provide a Teacher and Student Edition for each grade.

Arranged by grade and by strand, the textbook is organized specifically to empower teachers by building their knowledge and understanding of Mathematics in a way that is comprehensive but does not sacrifice its integrity.

Features of the textbook are:

- Math language
- Time required to teach lesson
- Vocabulary
- Materials required
- Objective
- What students should know already
- Lesson structure with step by step Introduction, Middle, and Summary.
- Lesson activity
- Extension activity
- Support for SEN and ELL
- Teacher assessment notes - a table to make notes on students attainment
- Student exercises
- Common misconceptions
- In the classroom extensions
- In the home extensions

## Texas Essential Knowledge and Skills for Math — Grade 4

## Geometry and measurement

The student applies mathematical process standards to analyze geometric attributes in order to develop generalizations about their properties. The student is expected to:

4b6A: identify points, lines, line segments, rays, angles, and perpendicular and parallel lines

## Aligning Learning With the Content Standards:



At the end of the section, students will be able to:

- Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.
- Identify these in two-dimensional figures.
- Classify two-dimensional figures (including special triangles, e.g., equilateral, isosceles, scalene, and special quadrilaterals, e.g., rhombus, square, rectangle, parallelogram, trapezoid) based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.
- Recognize right triangles as a category, and identify right triangles.
- Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts.
- Identify line-symmetric figures and draw lines of symmetry.

## Math Language:

Students should become increasingly confident in using such terms and phrases as:

**Points, lines, line segments, rays, angles (right, acute, obtuse), perpendicular, parallel lines, two-dimensional (2D), triangle, equilateral, isosceles, scalene, quadrilateral, rhombus, square, rectangle, parallelogram, trapezoid, right triangles, symmetry, line of symmetry.**

Section 6 — Geometry and measurement

Teach

The TEKS, student expectations and breakouts are printed clearly at the beginning of each section.

The vocabulary required for the TEKS is included in the Math Language section. For teachers with ELL students this is a key component of the program. In the student textbook one full page is used to display the words. The vocabulary pages are included on the Blackline Master CD Rom. We encourage study of the mathematics vocabulary as homework.

Detailed step-by-step lesson plans are provided for every TEKS, student expectation and each breakout. The TEKS, student expectations and breakouts are printed on every page.

Support is provided for SEN and ELL students within each lesson plan.

406

4b6C: apply knowledge of right angles to identify acute, right, and obtuse triangles  
4b6D: classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size

- Draw some triangles on the board and have students say which triangle they are and describe the characteristics.
- Draw some polygons on the board and have students use a piece of cardboard to test if any of the angles are greater than a right angle.
- Draw some polygons on the board and have students use a piece of cardboard to test if any of the angles are less than a right angle.

Activity (20 minutes):

Pair/Group Activity:

- Have students discuss the plastic, wooden, or cardboard shapes in terms of parallel and perpendicular sides and sizes of angles. Ask them to trace a shape and note down as much information as they can about the shape.

Individual Activity:

- Ask students to work through the exercises in their textbooks.

Extension Activity:

- Students could make a list of all the different plastic, wooden, or cardboard shapes, drawing around them, identifying them by name, and using a protractor to measure the angles and a ruler to measure the sides.

Support:

**SEN:** Have students draw a set of parallel and perpendicular lines and annotate them. They can use these notes as reference, along with a folded sheet of paper forming a right angle, to help them identify the attributes of the shapes in the exercise.

**ELL:** Take this opportunity to ensure ELL students have a firm grasp of the names of plane shapes.

# Teacher Textbook - Traditional Lesson Plans

413

**4b6C:** apply knowledge of right angles to identify acute, right, and obtuse triangles  
**4b6D:** classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size

**Student Exercise:**

Which of the following shapes have an obtuse angle?  
 Use a piece of card to check. Put a check mark in the correct boxes.

How many right angles can you find on this page in total?

Memory Jiggler

**Remember the facts**  
**acute** means smaller than a right angle  
**obtuse** means bigger than a right angle but less than a straight line

Teacher Edition Section 6 — Geometry and measurement

Student exercises are visual and engaging. The teacher tips and answers are removed from the student sections.

Clear diagrams are provided and labeled.

Classroom activities can be completed using sharing boards, used throughout the program. This provides instant feedback for the teacher. Sharing boards can be bought or made cheaply.

Teacher tips are provided to help new teachers.

417

**4b6C:** apply knowledge of right angles to identify acute, right, and obtuse triangles  
**4b6D:** classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size

**Classroom Activity:**

**Triangles**

**A right triangle**  
 A right triangle has a square corner that is a right angle.

**An equilateral triangle**  
 An equilateral triangle has three sides of equal length.

**An isosceles triangle**  
 An isosceles triangle has two sides that are of equal length.

**A scalene triangle**  
 The sides of a scalene triangle are all of different length.

**Teacher Tip**

Work through the list of shapes and their attributes with the class. Explain that one stroke through two or more sides shows that they are the same length.

Teacher Edition Section 6 — Geometry and measurement


# Student Textbook - Traditional Lesson Plans

260


4b6C: apply knowledge of right angles to identify acute, right, and obtuse triangles  
4b6D: classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size

**Student Exercise:**

Draw a line to join each triangle to its description.  
Write in the name of each triangle.




\_\_\_\_\_ triangle




Has one angle that is a right angle.

\_\_\_\_\_ triangle




Has three sides that are all equal in length.

\_\_\_\_\_ triangle



Has three sides that are all of different lengths.

\_\_\_\_\_ triangle



Has t  
ec

Section 6 — Geometry and measurement


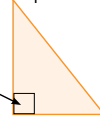
Student exercises are visual and engaging. The teacher tips and answers are removed from the student sections.

252


4b6C: apply knowledge of right angles to identify acute, right, and obtuse triangles  
4b6D: classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size

**Student Narrative:**

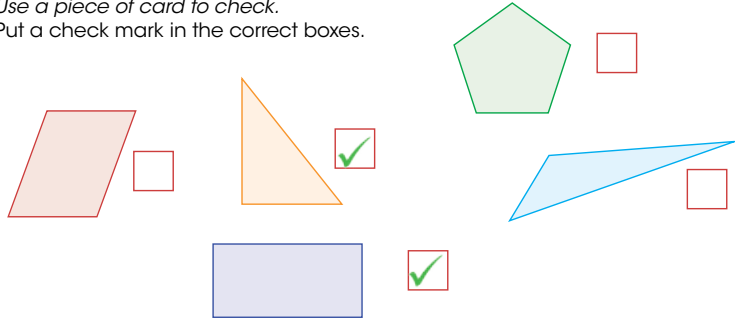
**Write in the missing words.**  
A **right angle** is an angle that forms a square corner.  
A **right angle** is a quarter of the full turn. It measures  $90^\circ$ .

Look at this **right** triangle. You could place a corner of card or piece of paper onto the corner of the triangle to check that the angle you are measuring is a **right** angle.



Which of the following shapes have a right angle?  
Use a piece of card to check.  
Put a check mark in the correct boxes.



Section 6 — Geometry and measurement

Student Edition

Literacy underpins the program. Students focus on key vocabulary in each strand.

Students perform better if they recognize and can apply mathematical language.

# Student Textbook - Traditional Lesson Plans

190

**4b3F:** evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , and 1, referring to the same whole  
**4b3G:** represent fractions and decimals to the tenths or hundredths as distances from zero on a number line

**Common Misconceptions:**

- It can be difficult for students to appreciate the relationship between a fraction of something (such as a shape) and a fraction as a number which can be positioned on a number line. Seeing the number 1 on the number line as a quantity with an endpoint marked '1' should make it easier for students to divide the space between 0 and 1 and thus position fractions on the number line.

**In the Classroom:**

- With student help, make a large number line from 0 to 1 featuring all the fractions they know. Ask fraction questions with students moving to the relevant position on the number line to answer.

**In the Home:**

- Have your child cook with you using cup measures.

These come in  $\frac{1}{3}$ -cup,  $\frac{1}{4}$ -cup, and  $\frac{1}{2}$ -cup sizes and are a useful way to begin to understand the relative size of fractions.

Ask questions such as 'Which is bigger,  $\frac{1}{3}$  a cup or  $\frac{1}{2}$  of a cup?'

Section 3 — Number and operations Tea

Common misconceptions highlight incorrect conclusions which can be made by students and advises ways to avoid these mistakes. In The Classroom provides more math focused activities that can be used throughout the school day.

At the end of each strand an At Home page appears. This page is provided so that families can work together to cover content.

A clear glossary helps students to focus on key mathematical terms.

279

**Glossary:**

abacus	A calculation tool, often constructed as a wooden frame with beads sliding on wires.
addend	A number that is being added.
addition	Combining two or more numbers to give a total.
area	The surface area of the boundary. We find area by counting the number of squares needed to cover a flat surface.
array	A arrangement of objects in columns and rows.
associative property	Of addition: the grouping of the addends does not change the sum.
associative property	Of multiplication: the grouping of the factors does not change the product.
calendar	A system that orders time in days, weeks, months, and years.
capacity	The amount that a container can hold.
cardinal numbers	A number that shows quantity rather than order.
cent sign (¢)	The symbol used after a number to show the value in cents.
centimeter	A unit of measurement for small objects.
circle	A closed curve.
clockwise	Is the direction taken by the hands of the clock.
commutative property	Changing the order of addends in addition or factors in multiplication, does not change the sum or product.

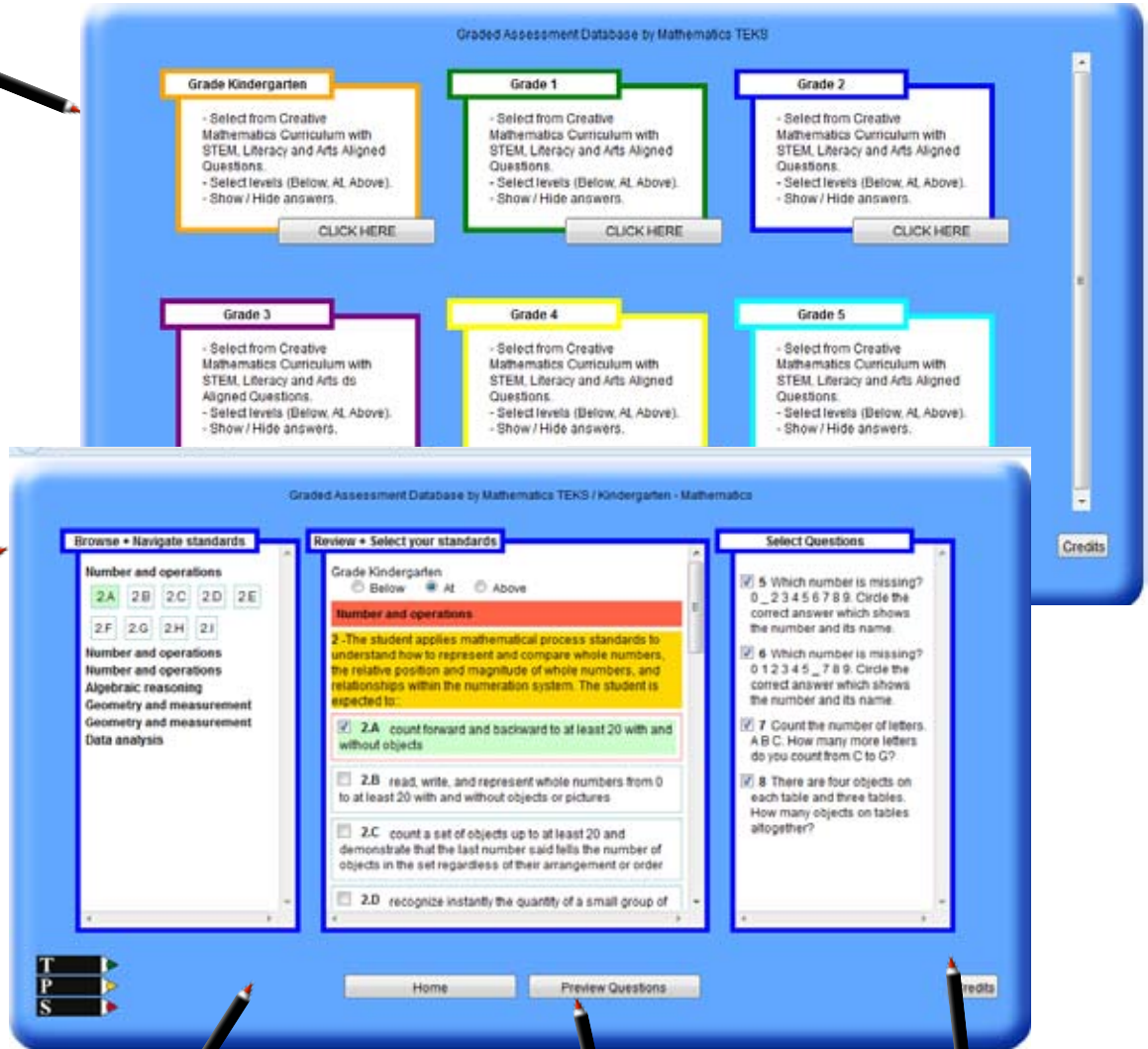
Student Edition



# Assessment Database

We encourage benchmark and continual assessment of each student by breakout, by student expectation, by TEKS, by grade. Effective and efficient instruction relies on accurate assessment. The Creative Mathematics Curriculum encourages two types of assessment; visual lesson plan activities and quizzes/tests. Visual assessment consists of watching students perform activities, such as found in STEM Project Editions or Arts projects. The Assessment Database houses over 2,200 assessment questions categorized by grade, TEKS,

Open the assessment database. The first screen shows the grades available. Choose the grade to assess.



On the next screen select which TEKS you would like to assess on the left hand side.

In the center of the screen you can choose whether you want to use Below, At or Above grade questions. You can also select grades in this box.

Clicking the preview button shows the questions which you have chosen and the form the test will take including lines for the student to fill in their name and class.

In the right hand box questions are displayed on the standards you have selected. If you would like to remove a question simply uncheck the box.





# Math through Arts Guide

Action Based Curriculum is a British company who has focused its energy on providing excellent materials, which are approved by 'nasen' - nationally approved for all learners, including those with disabilities, ELL and special education needs.

Action Based Curriculum helps students to access learning through their fun action based, and fully inclusive crafting and reader activity book materials.

Each TEK for K - 5 is addressed using a combination of Mathematics, Literacy and Science inquiry based projects with crafting equipment and reader books.

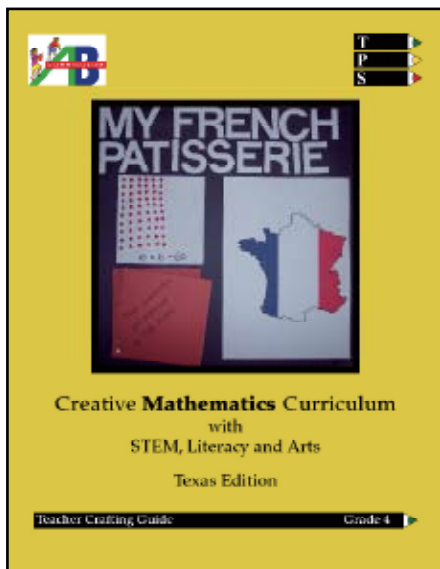
The teacher/writers have created linked personal, social and health education (PSHE) topics to assist teachers in an integrated subject delivery saving much time. Key topics such as **Anti-bullying, Family, Healthy Me, Community**, and **Going Green** can be found within the program. Twenty four topics are included.

The arts activities are excellent visual assessments.

A die cutting machine is used to allow all students to cut perfect shapes.

Each student creates a personalized output.

Most materials are reusable.



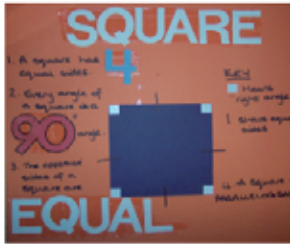
Die Cutting Exercise



Individual Activity

Rufus says:

1. Die cut one of the square die shapes using blue paper.
2. Complete the statements below.
3. Use scissors to cut small squares to represent a right angle.
4. Die cut the word, "Square" in white paper.
5. Glue the title "Square", centered, one inch from the top of your background paper.
6. Glue the square die shape two inches below your title.
7. Write or die cut the completed statements. Glue the completed statements around the square.
8. Glue the small squares onto the larger square to represent right angles.
9. Write letters for a key onto the paper by the side of your larger square.



1. A square has equal sides.
2. Every angle of a square is a equal angle (90°).
3. Opposite sides of a square are equal.
4. A square is a parallelogram.

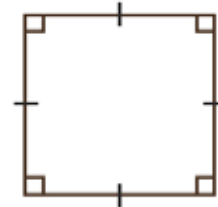
A series of one hour crafting activities aligned exactly to grade appropriate Mathematics and covering elements of Science and ELA content.



Each crafting exercise is specifically linked to a personal, social and health topic as well as specifically covering the Mathematical content.

Role play is included in some of the activities helping to bring the subject alive for all students.

One teacher wrote **'It not only focused children on the outcome of the activity, but helped them produce work to a very high standard that gave great sensory benefits. It was motivational due to the independence it gave them.'**



KEY  
 means "right angle"  
 | show equal sides

Paired Activity

1. Work with a partner and review each other's work.
2. Discuss any differences and ask for help from your teacher if you cannot agree on a particular answer.
3. Draw a design for the square gold medal lid using red, white and blue.
4. Is your shape also a rhombus, and why? Use your isotiles to help you answer.

Answer: Yes, because it has equal sides.

You have acted out being a USA designer group who create sample box designs for medal presentation keepsake boxes. You have reviewed shapes of boxes; rhombus, square, rectangle, parallelogram and trapezoid which designers categorize as being special quadrilaterals. You have highlighted the presence of parallel lines, and different angles included or excluded in shapes. You have categorized triangles as being: equilateral, isosceles, or scalene triangles.

# Video Arts Guide

Ellison Inc. are a well known provider of die cutting machine equipment and die shapes.

Ellison Inc. have created, from scratch, a series of lesson plans for teachers to review with or reteach students content of each strand K - 5.

A matching video for the teacher will hugely assist teachers who may be concerned with art. The die cutting machine does all the intricate work, and these communications based lesson plans with videos will greatly aid all struggling students.

Often making models will unravel misconceptions for students.

The low text results in all English Language Learners being able to master the mathematics content through art projects. Ellison Inc. also include ELPS links in each lesson plan to ensure continued vocabulary learning.

**Ellison**  
Student Lesson

## Fraction Wheel and Fraction Fringe

Easily create hands-on manipulatives to teach and reinforce fractions.

**TEXAS ESSENTIAL KNOWLEDGE AND SKILLS**

- 1.11.A. Math, Grade 2
- (2) Number and operations. The student applies mathematical process standards to recognize and represent fractional units and communicates how they are used to name parts of a whole. The student is expected to use concrete models to count fractional parts beyond one whole using words.

**ENGLISH LANGUAGE PROFICIENCY STANDARDS**

- 5.G.3. SLP
- Cross-curricular second language acquisition/writing. The ELL writes in a variety of forms with increasing accuracy to effectively address a specific purpose and audience in all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in writing. In order for the ELL to meet grade-level learning expectations across foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student's level of English language proficiency. For kindergarten and first grade, certain of these student expectations do not apply until the student has reached the stage of generating original written text using a standard writing system. The student is expected to explain with increasing specificity and detail to fulfill content area writing needs as more English is acquired.

**OBJECTIVE**

- Students learn to associate and understand fractions and more with the Fraction Wheel and the Fraction Fringe.

**BACKGROUND**

The Fraction Wheel and Fraction Fringe are excellent math manipulatives that can be used to represent anything from equivalence to standard measurement. For extra practice, show students to use the Fraction Fringe and Wheel during guided instruction and independent study. Use manipulatives to verbally explain fractions and show in written form. Advanced learners can find real world uses for the Fraction Fringe and Fraction Wheel.

The teacher can explore creative ways for using the Fraction Wheel and Fraction Fringe in any subject area.

**Fraction Wheel Applications:**

1. **EQUIVALENT FRACTIONS** can be demonstrated using the Fraction Wheel. Students manipulate the wheel to show equivalency. Students also estimate fractions with the Wheel.
2. **PERCENTAGES AND GRAPHING** can also be demonstrated using the Fraction Wheel. The teacher may ask students to show percentage of students wearing particular colors using the colored wheels. These wheels can then be used as pie graphs.
3. **NATIVE AMERICAN HISTORY** comes to life when students use the Fraction Wheel as medicine wheels to study native American culture.

**Fraction Fringe Applications:**

1. **EQUIVALENT FRACTIONS** can be demonstrated using the Fraction Fringe. Using the Fraction Fringe #1, students set up a 1/2 Fringe and see that two of the 1/4 Fringes and four of the 1/8 Fringes are equivalent. Students set up two of the 1/8 Fringes and see that those Fringes are equal to 1/4 and therefore will make. However, if students pick up three of the 1/8 Fringes, those Fringes are not equivalent to anything and will therefore NOT make. Students may also use Fraction Fringe #2 in a similar way.

**Conclusion**

Page 1 of 8

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Alignment to ELPS standards is referenced within each lesson plan.

# AVIMBA Families

AVIMBA is a company who have created a totally secure system within which families can work with their children and other families to provide additional support to mathematics and science learning, K - 5.

Within the system all attempts at tests, sharing of any documents and imports of web based information can be stored. The system permits hierarchy set up so documents can appear for some members and not others.

The system allows review of any saved document.

Within AVIMBA there are three excellent "games" for children who are struggling to learn English, count or use memory for storing data; ABC, 123 and Pairs.

AVIMBA makes communications between teacher, parent and student simple.

As an example, homework might be set using the TPS Interactive worksheet system.

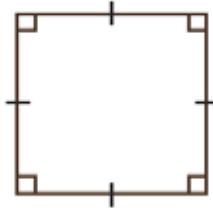
The saved output can be moved and stored in AVIMBA.

Within AVIMBA, messaging allows the teacher and parents/guardians to discuss student progress.

Student report cards can be imported and stored.

Results of attempts at games within AVIMBA and for any web-based program, which provides an output, can be stored within this excellent system.

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**KEY**  
□ means "right angle"  
| show equal sides

**Paired Activity**

1. Work with a partner and review each other's work.
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G4.G.2. teacher Edition Grade 4



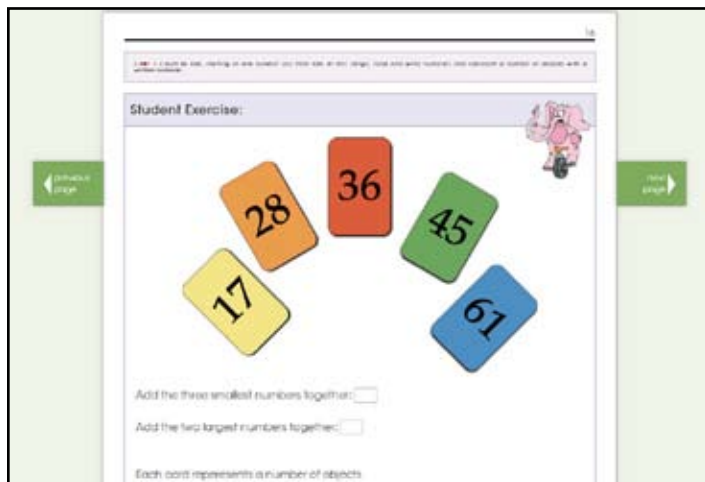
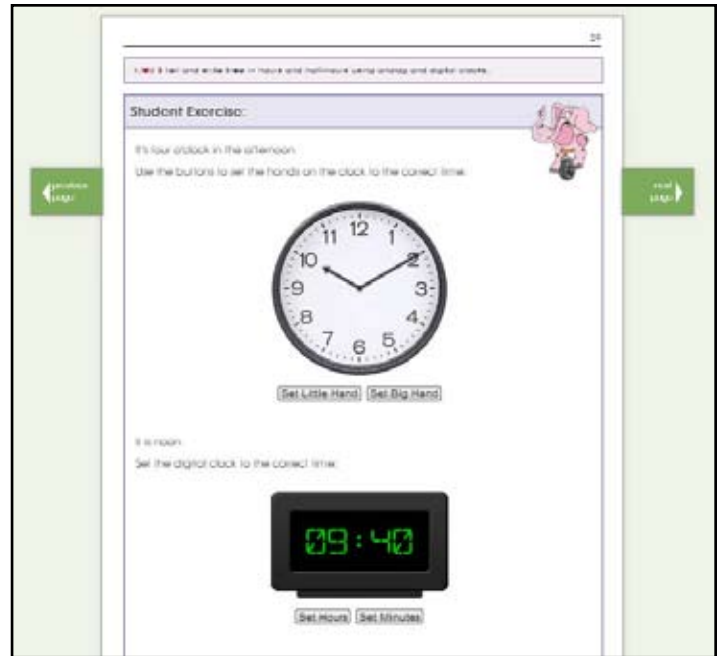


# Interactive Homework System

TPS Publishing Inc. has developed an interactive homework system, which can be accessed through the web. This means that students can complete their assigned homework activities wherever there is an internet connection; no excuse for lost papers anymore!

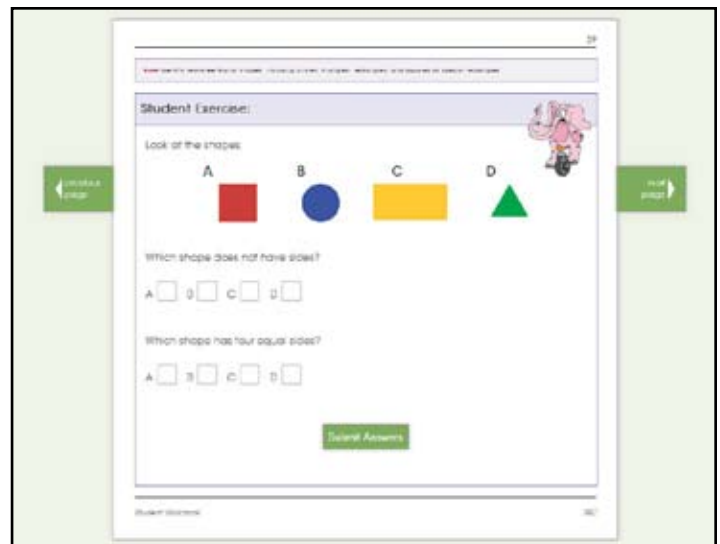
The interactive homework system provides activities for grades K - 5 Mathematics. Each student expectation and therefore all Texas Essential Knowledge and Skills are covered, with multiple exercises available for each.

Our system will store the students' results as well as how many attempts it took them to reach the correct answer. This is a wonderful system, which will



enable parents and teachers to review student work and progress on a regular basis.

All results from our interactive homework system can also be imported and stored using the Avimba system. This means that all work or attempts at work can be shared between students, parents and teachers.



# Beginning

Determine student's initial understanding using assessments such as STEM or Crafting or

Determine best possible strategy to address need

Direct instruction with practice

Know but do not understand

Need creative approach

TPS Publishing traditional textbook and complete lesson plans

STEM Projects

Crafting, which may include activity guides and reader books

Assess student understanding of Standards by using TPS assessments

From data and observations, determine if students are ready

All instruction supported by Parent/Teacher Guides and Professional Development

Next Strand



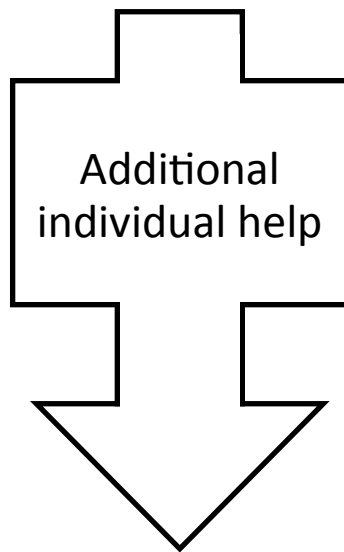
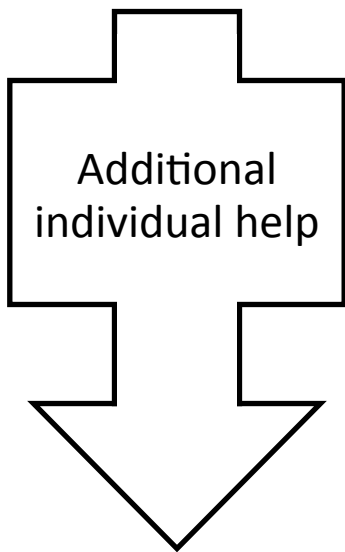
# of a strand

Using TPS assessment database, visual assessments  
or informal assessment strategies.

Needs, individually and/or collectively

Language difficulties

Archway  
Literacy, Ellison  
lessons and  
videos, AVIMBA



Focus  
Tutorials,  
AVIMBA

Universal  
Access  
Alternative  
lessons

Assessment

Decision

Instruction

Assessment database and/or visual assessments such as STEM or Crafting

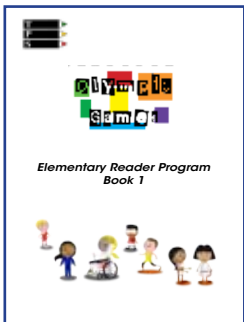
to move on to next standard or if more instructional time is needed.

de, Craft Packs and Kits, Invicta Manipulatives, and

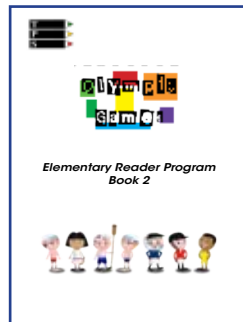
# Reader Books

Exciting reader books have been written appropriate for each grade reading ability. In Grades K - 2 the teacher/writers focus on the topic of sport at the Olympics to motivate students to read, write, communicate and exercise. Each book adds to the literacy element of the program engaging students with fun stories. For lower grades the students may read or be read to. Colorful graphics illustrate the books. Within each book are further exercises and links to other PSHE resources.

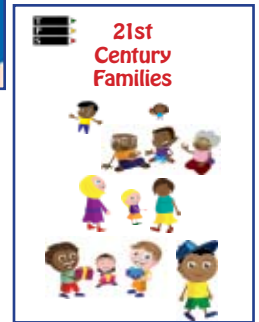
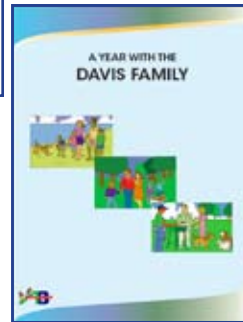
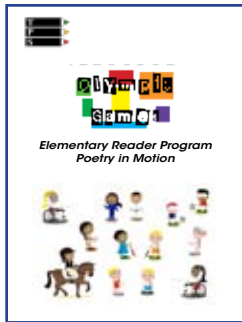
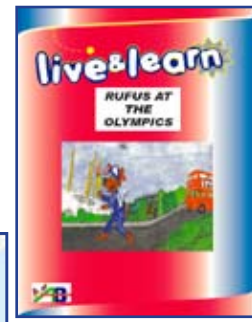
Grade K



Grade 2



Grade 4



Grade 1

Grade 3

Grade 5

In Grade 3 the writers have created a fictional family. Each chapter covers a personal, social or health education topic.

Each chapter is linked to a likely family event.

Educational paper craft packs are linked to each chapter.

The craft packs act as visual assessment tools.

Grade 4 students return to the Olympic Games.

Geography and social reviews are linked to coverage of Grade 4 mathematics.

Students learn about countries outside the U.S.A.

Grade 5 students will review 21st Century families. There are many types of family units. Students learn to understand the variances there can be and work together to accept each unit. The reader book is a gentle introduction to the subject and is optional. The Amelia Rose Explores science books include ELPS and Math TEKS too.

Beginning with simple sentences in Kindergarten, the reader books engage students with fun characters and stories. Poetry and drama is incorporated as well as links to the Action Based Curriculum ancillary resources focusing on PSHE subjects such as Anti-bullying and Healthy Eating.



# Universal Access Reteach Library

Often teachers are faced with challenging situations in their classrooms; dozens of students, all with diverse needs. How is one teacher to address all of the specific needs? We have many resources which are web based and housed within our Reteach Library.

For example, we have activities which are teacher-led hands on activities covering many of the key concepts for K - 3 mathematics written by an inner city teacher who has a very diverse population of students.

All students are engaged regardless of ability.  
No student feels left behind and bored by the lesson.  
ELL students are integrated into the lesson and not segregated.

**All students** cover the key topics in the relevant TEKS for the grade's mathematics.

Within this library we also include many literacy with mathematics exercises that can be set for homework, K - 5.

Alternative lessons  
are provided for ELL,  
Intensive Level,  
At-Grade Level, and  
Advanced Level  
students.



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**Lesson Title:** Three Dimensional Geometric Shapes

**Objective:**  
Students will be able to recognize and describe three dimensional geometric shapes. Students will be able to recognize three dimensional geometric shapes within everyday common objects. Students will be able to see the relationship between two dimensional and three dimensional objects.

**Language to Learn:**  
Cube, sphere, cone, side, face, edge, base, side, solid, vertex

In the previous lesson, the students learned about two dimensional shapes. They learned how to identify squares, rectangles, circles, and triangles. They learned the different properties of these geometric figures. They learned about their similarities and their differences.

In this lesson, the students will learn about three dimensional shapes. They will learn new terminology and see the relationship between a two dimensional shape and the three dimensional shape which can contain it as a face.

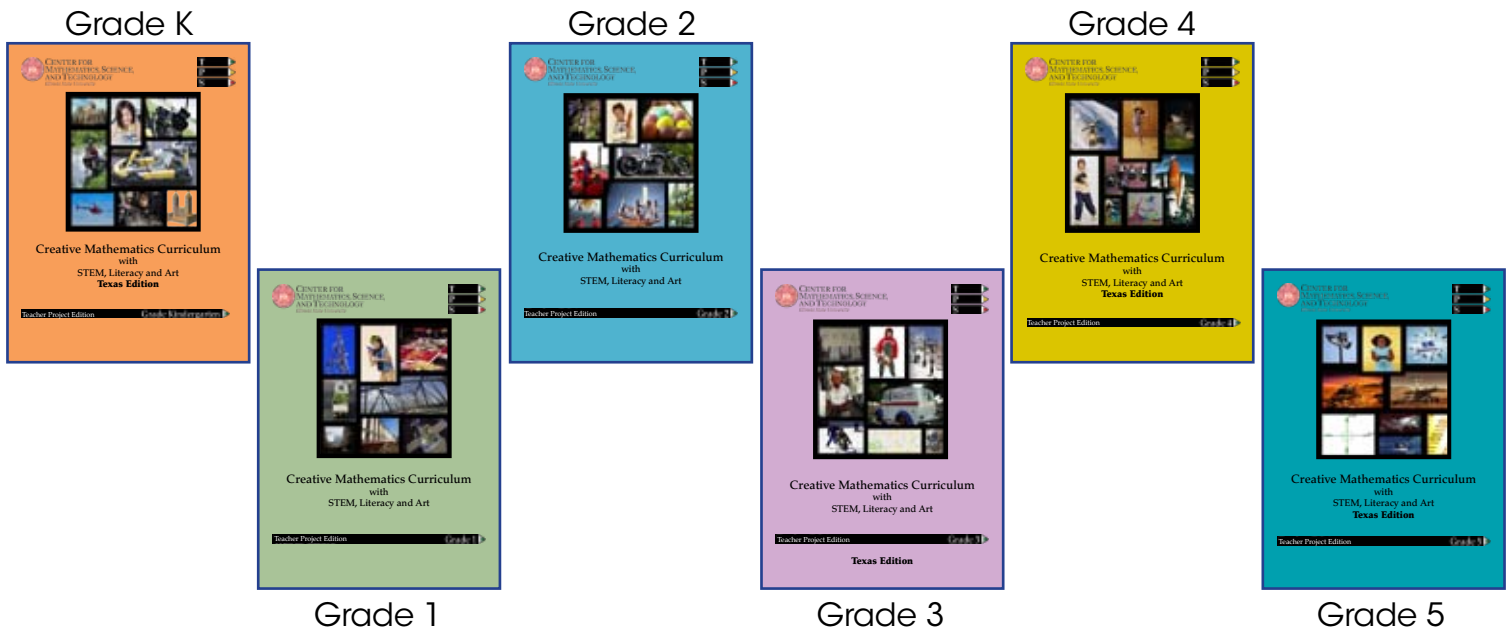
**Cube**

- Show the students a cube.
- Tell the students: This is a cube.
- Show the students one side of the cube.
- Ask the students: What shape figure is the side of the cube?
- Ask the students: How many sides does a cube have?
- Tell the students we are going to count the number of sides of the cube. Turn the cube, point to each side, and simultaneously count 1 through 6.
- Tell the students: We call a side of the cube a face of the cube.
- Ask the students: How many faces does a cube have?
- Tell the students we are going to count the number of faces of the cube. Turn the cube, point to each face, and simultaneously count 1 through 6.
- Point to the edge of the cube. Run your fingers down the edge of the cube.
- Tell the students: This is an edge of the cube.
- Tell the students: The edge of the cube is where two faces meet.
- Ask the students: How many edges does a cube have?
- Show the students that a cube has twelve edges.
- Point to the corner of the cube.
- Tell the students: This is the corner of the cube.
- Tell the students: The corner of a cube is where the three edges meet.
- Ask the students: How many corners does a cube have?
- Show the students that a cube has eight corners.

Universal Access Teacher Classroom Support Guide      Heidi Kinsinger

# STEM Project Editions

The STEM Project Edition, for grades K through 5, takes mathematics instruction to a whole new level. Students learn TEKS content by using mathematics in fun projects. They design and build a variety of devices and use mathematics to measure, describe, and predict their operation. STEM projects work well as a visual assessment at the beginning or end of a unit of instruction. They also can be used to tie unrelated concepts together. Mathematical Process Standards are clearly addressed and utilized in every project.



All activities are written in a three-part learning Cycle format that allows students to learn by experiencing the concept, not just hearing about it.

**Explore**

**Describe**

**Use It**



**Lesson objective**

- Students can extend their understanding of counting by explaining place value and use it to add and subtract.

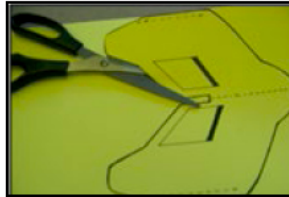
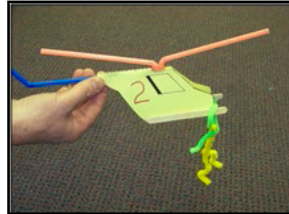
**Preparation**

Each student will build their own mini-helicopter. Each helicopter requires the following materials:

- 1 piece of construction paper 12 cm by 16 cm
- 3 small drinking straw approximately 16 cm long
- 2 craft (Popsicle) sticks
- Stapler and 2 staples
- About 10 cm of transparent tape
- Scissors
- Markers
- Small treats that can be purchased at the company store

**Explore It**

1. A master copy of the body (fuselage) of the helicopter is provided. Make copies on construction paper. There should be 10 of one color, 10 of another color, etc. Color coding will be important later.
2. Allow students to cut out their helicopter and then fold it in half on the dotted line.



Teacher Project Edition

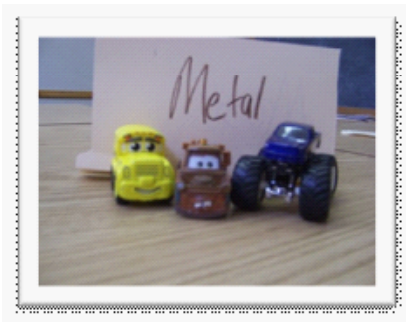
# Have No Fear!

“STEM” is a buzz word. However the University writers have been creating STEM lesson plans for two decades.

The instructions are clear and concise.

Teachers can receive excellent professional development at their school or at the University.

Have no fear, we are here to help you deliver STEM activities.



Kindergarten students learn classification and measurement as they race toy cars by similar groupings.

Second graders design and build custom mini-choppers to learn how to add multi-digit numbers.



Fourth grade students learn fractions by designing and building alien insects and making a stop-motion video of them dancing on a stage.





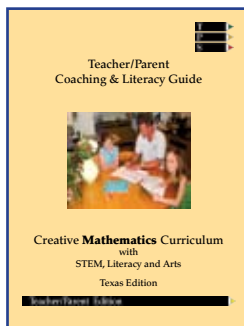
# Teacher/Parent Guide

We all know the importance of good cooperation and support from home. TPS represents “Teachers, Parents, Students”.

The program’s Parent Guide provides information and ideas for how parents can work with the teachers to enhance the education of their child.

The guide has three key sections; Our philosophy for teaching mathematics, the Texas Essential Knowledge and Skills, Literacy and Coaching by TEKS, by grade.

The coaching guide is a great tool to unravel misconceptions and or to make available for substitute teachers.



The literacy worksheets within the Parent Guide are provided on the teacher blackline master. Parents can be confident that by completing the worksheets they are assisting their children master the mathematics content in each year. At Home activities are also provided in each Student Textbook.

The data can all be stored in AVIMBA.

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Jack be nimble, Jack be quick, Jack jumped over some candlesticks. Write in the missing numbers below.

1 2 3 4 5 6 7 8 9 10 11 12 \_ \_ 15 \_ 17 18 \_ 20

Write the numbers 1 to 20 in order to check your work

\_\_\_\_\_

\_\_\_\_\_

There was an old lady who lived in a shoe, she had so many children she didn't know what to do.



## Blackline Master

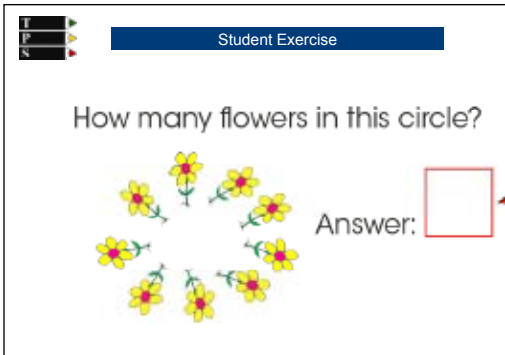
The usual master sheets are included for your use such as a 100 chart, a number line, shapes, tables. We have added a lotto game. In addition we provide the Student Textbook vocabulary and At Home pages together with the literacy worksheets, which are by TEKS and provide useful homework or further class assessment materials.



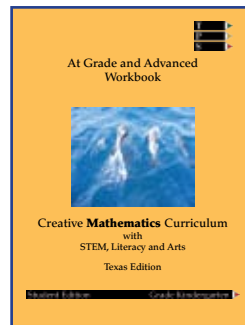
# Focus Tutorial and K-5 Workbooks



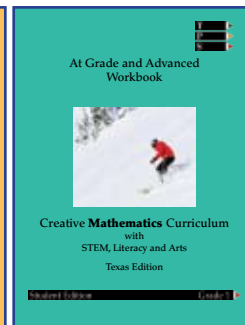
The focused tutorial is a Web based presentation covering Mathematics content in each grade. It is recommended for use for students who really struggle with traditional textbook learning, either due to low English Language skills or other special educational needs. It can also be useful to students with gaps in learning who are At Grade.



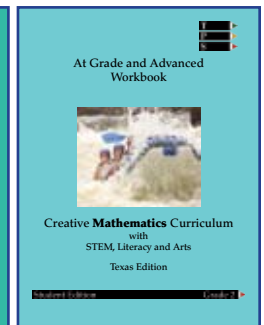
We provide web based interactive workbooks K-5. Review exercises by standard provide wonderful resources to use before examinations in conjunction with the Assessment Database questions. The workbook can be used in the classroom and/or at home. The product can be purchased in print format.



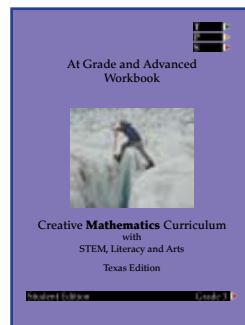
Grade K



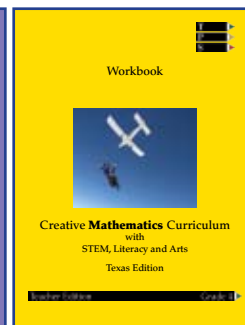
Grade 1



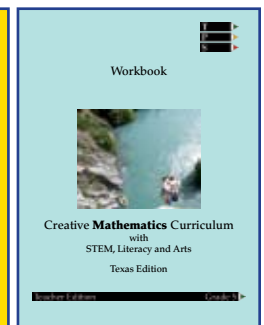
Grade 2



Grade 3

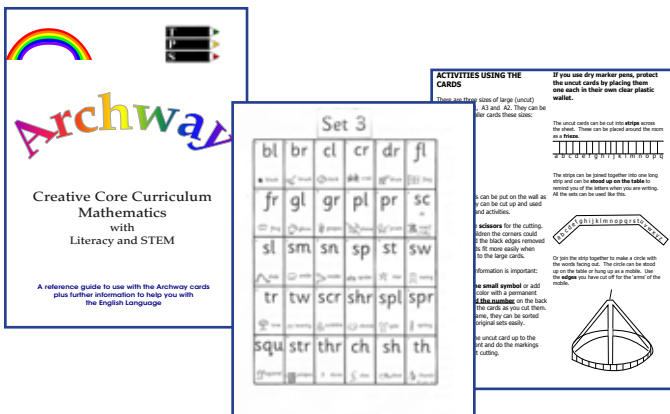


Grade 4



Grade 5

## Archway



One of our teacher/writers, Lynda Lunn, has made it her mission to help students to be able to read and to write.

We provide this mini program to assist all of the ELL students in your classes. By using the focus tutorial, Ellison video content, art projects and Archway; ELL students progress more quickly.

# AB Curriculum

## Activity Guides and Craft Packs

Students really enjoy craft activities, especially when using a die cutting machine. If they are tied directly to required mathematics concepts and reading, even better. Our Activity Guides and Educational Paper Craft Packs provide exciting projects for both teachers and students. Imagine on the first day of a new school year starting with "All about me". In about two hours all students will be communicating and working as a team.



**Activity Guide Topics are:** I Love My Life, Family, Healthy Me, Baby Science parts 1-4, Community, Enterprise, Magic Math, Word Play, Antibullying, Humans and Other Animals, Life Processes, Going Green, Safety on the Internet, I Love my Pet, Olympic Games, My Family, Transitions Pre school to Elementary, Transitions Elementary to Middle, Stay Safe, Going for Goals, Emotions, Handling Data, Food, Nature, Wild Animals, Transport, Understanding Shape, Farm Animals.

**Educational Paper Craft Packs are:** All About Me, Family Tree, Ancient Egypt, Back to School, Careers, Communication, Down on the Farm, Ecosystems, Knight in Shining Armor, Music, My Home, My Journey, My Planet, Pretty as a Princess, School Days, Solar System, Sports, Transportation, Wheels in Motion, Birthday, Friends, I love my Pet, My Vacation, Sleepover.



## Invicta Manipulatives

Invicta has been providing high quality innovative educational products for over 50 years. Their award winning manipulatives are fun to use, very robust and affordable.



# Digital Content

Digital content of all products is accessed from the TPS website.

A license can be purchased by school and or by district and logon details provided for each.

All content can be downloaded, stored and accessed on digital and hand held devices as required.

To see sample of all digital content within the program go to:  
<http://www.tpspublishing.com/samples/>

The screenshot displays a digital content interface. On the left is a 'Table of Contents' sidebar with a list of items from 01 to 15. The main area shows two pages of a lesson plan. The left page is titled 'Student Narrative:' and discusses numbers 0, 1, and 2, including a number line and a frog illustration. The right page is titled 'Lesson Plan:' and includes sections for 'Objective', 'What Students Should Know Already', and 'Lesson Structure'.

The screenshot displays a digital content interface. On the left is a 'Table of Contents' sidebar with a list of items from 01 to 15. The main area shows two pages of a lesson plan. The left page is titled 'Comprehension of the Standard:' and includes activities like 'Label these shapes' and 'Draw a picture using the shapes'. The right page is titled 'Assessment:' and includes questions like 'What shape is the window?' and 'What shape is the cookie?'. Both pages feature illustrations of various shapes and objects.

## Thumbnails



Thumbnail 1: A page with a pink header and a green footer. It contains text and a small illustration of people.

1

Thumbnail 2: A page with a pink header and a blue footer. It contains text and a diagram of a number line.

2

Thumbnail 3: A page with a pink header and a blue footer. It contains text and a diagram of a number line.

3

Thumbnail 4: A page with a pink header and a blue footer. It contains text and a diagram of a number line.

4

Thumbnail 5: A page with a pink header and a blue footer. It contains text and a diagram of a number line.

5

Thumbnail 6: A page with a pink header and a blue footer. It contains text and a diagram of a number line.

6

Thumbnail 7: A page with a pink header and a blue footer. It contains text and a diagram of a number line.

7



2

- 3b2A:** compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded form
- 3b2B:** describe the mathematical relationships found in the base-10 place value system through the hundredths place
- 3b2C:** represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000

### Math Language:

Students should become increasingly confident in using such phrases as:

**Digit, round off, round up, round down.**

Memory Jiggler

Here are the digits  
0, 1, 2, 3, 4, 5, 6,

The value of digits may change with their position in a number.

thousands	hundreds	tens	ones
5	0	0	0
	4	0	0
		7	0
			8
The value of 5 is: 5 thousand (5,000)	The value of 4 is: 4 hundred (400)	The value of 7 is: 7 tens (70)	The value of 8 is: 8 ones (8)

Section 2 — Number and operations





- 3b2A:** compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate
- 3b2B:** describe the mathematical relationships found in the base-10 place value system through the hundred thousands place
- 3b2C:** represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers

## Lesson Plan:

**Title:** Place Value in four-digit numbers.

**Time Required to Teach This Lesson:**  
50 minutes

*(Remember to allow extra time for managing the start and finish of the activities). At the beginning of each lesson and at intervals throughout the year, use ideas at the end of this section to reinforce and review this topic. This lesson and variations of this lesson will need to be repeated to reinforce the concepts within these standards in number sense.*

**Vocabulary:** Ten, hundred, thousand, value, place value, greater than, less than, more than, equal to, counting forward, backward.

**Numbers as Words:** One, two, three, four, five six, seven, eight, nine, ten eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety, hundred, thousand.

### Materials Required in This Lesson:

- Laminated sharing boards and dry erase pens (per student). (These can be made simply from laminated white cardstock).
- Classroom objects that are packaged in tens and hundreds where possible; paper clips, etc. in hundreds.
- Counters and cubes for counting, ones, ten ones joined together, and ten x ten joined as a hundred.
- Card strips of ten x 10.
- Cubes in tens, flat blocks of 100, and cubes of 1,000.
- A wall mounted written list of tens from 10 -100.
- A wall mounted hundred square.
- A wall mounted written list of hundreds from 100 - 1,000.
- A wall mounted labeled list of cardinal numbers as words.
- Card number strips divided into ten sections marked for demonstration.



# Professional Development

**On line** information, videos, webinars, and courses

**On Campus** workshops of various lengths and courses

**On Site** half day, one-three-five-ten day workshops

All Creative Mathematics Curriculum materials are supported by extensive Professional Development opportunities. The educational professionals at the Center for Mathematics, Science, and Technology at Illinois State University have designed and provide all services.

On-line opportunities include information about the products, sample lessons, short videos, webinars, and courses. Workshops can be conducted on site or on campus in Normal, IL. They vary from a half-day to 10 days in length. The shorter workshops provide an overview, the longer sessions allow extensive experience with teaching lessons and assessing student progress. All training consists of actually doing the lessons and projects.

**You will be actively involved.**





# How to contact us

Our teacher/writers are happy to discuss your questions and requirements:

**By Telephone**    **866-417-9384**

**By E-mail**        [info@tpspublishing.com](mailto:info@tpspublishing.com)

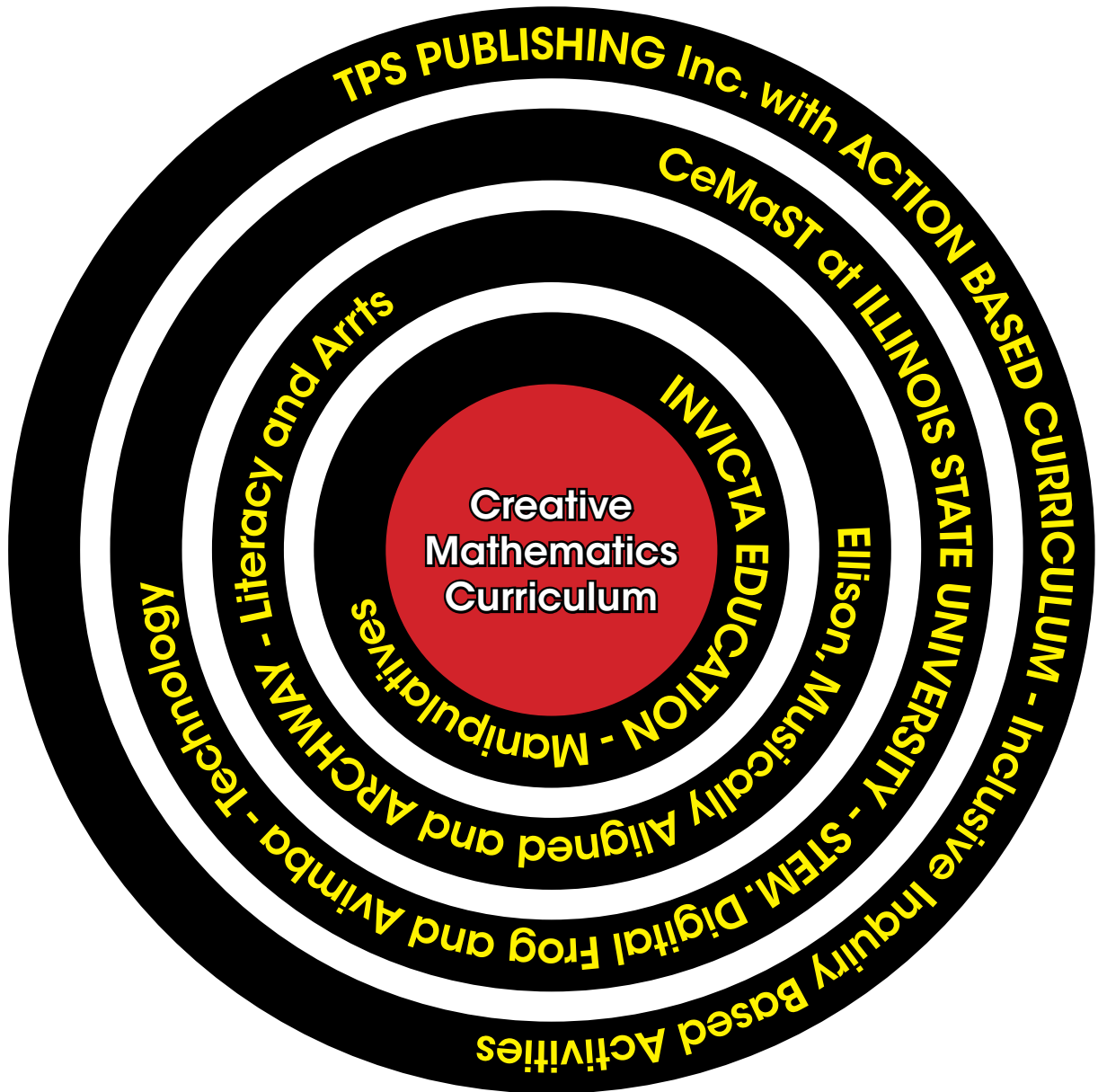
**By Mail**            TPS Publishing Inc.  
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Valencia, CA, 91355

**By Fax**             **800-578-5191**

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**To review our program please follow this link.**

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