ABOUT THIS RESOURCE

Details :

This 15 day unit reviews expanded form and place value of whole numbers up to one billion and then dives into place value of decimals up to the thousandths place. Also covered is expanded form using decimals and/or fractions as well as rounding and comparing decimals and properties of operations. If the skills don't completely align to your state standards, that's OK because this resource is 100% editable! All content can be modified to make this unit perfect for your classroom!

Included Resources :

➢ Weekly warm up recording sheets
➢ Weekly exit ticket sheets
➢ Blank lesson plans
➢ Unit tracking pages
➢ Unit vocabulary sheet
➢ Unit pre-assessment
➢ Warm ups

➢ Partner Activities
➢ Traditional notes
➢ Fold and Flip Notes
➢ Practice assignments (HW or CW)
➢ End of Unit Performance Task
➢ A complete PDF of the unit
➢ An editable PPT version of the unit.
➢ A binder cover and spine labels

Lessons :

➢ Lesson 1 : Place Value to the Billions
➢ Lesson 2 : Place Value to the Thousandths
➢ Lesson 3 : Rounding Decimals
➢ Lesson 4 : Base Ten and Expanded Form
➢ Lesson 5 : Properties of Operations

Licensing :

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http://bit.ly/LPerro

Meet the Author :

My name is Lindsay Perro and I have been an educational writer and content developer since 2009. After spending 8 years as a Middle School Math Teacher and Interventionist, I am now following my passion and focusing on creating quality educational resources to make your job easier and keep students engaged and excited about math!

Lindsay Perro

BEYOND THE WORKSHEET
QUALITY, ENGAGING AND CONTENT-RICH
RESOURCES FOR MATH IN THE MIDDLE GRADES!

Place Value & Algebraic Thinking
▶▶▶▶▶▶▶▶▶▶▶ 5th Grade Math

15 DAY UNIT

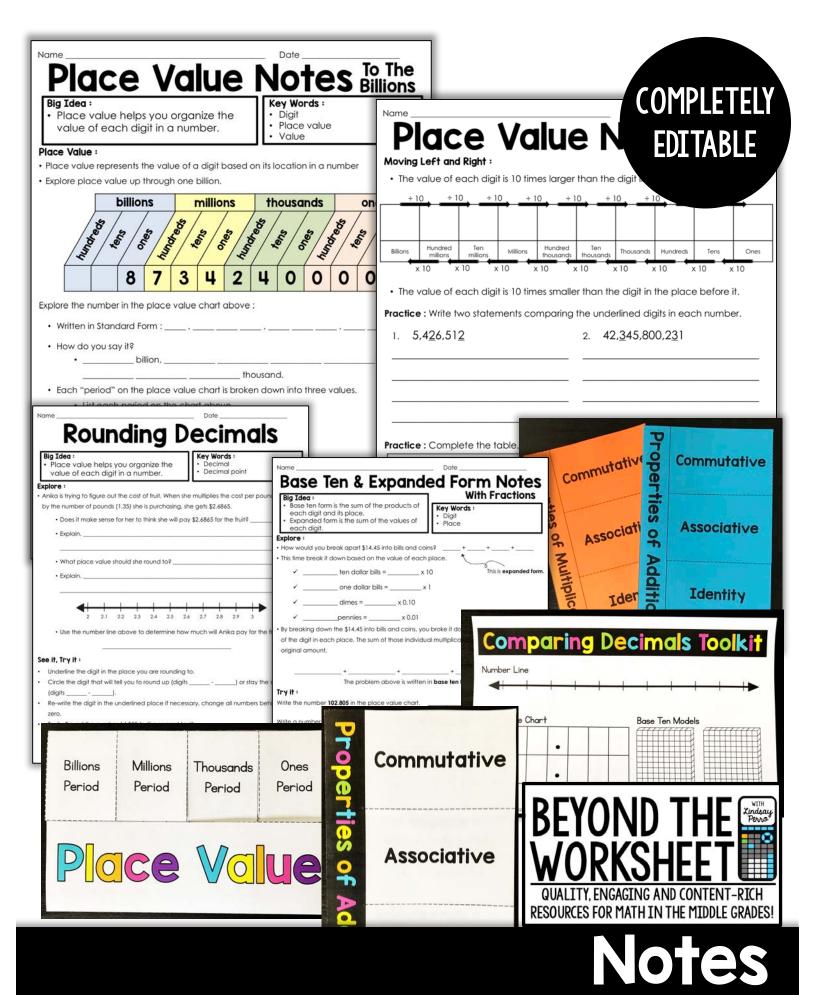| LESSON	RESOURCES
Unit Prep (pgs. 7 – 13)	• Weekly Warm Up Sheet • Exit Tickets • Lesson Plan Template • Vocabulary • Pre-Assessment
1) Place Value to the Billions (pgs. 14 – 25)	• Two Warm Ups • Place Value Exploration • Place Value Notes - To The Billions (2 pages) • Place Value Fold and Flip Notes • Two levels of completion – either color or black and white • Place Value Practice Worksheets (2)
2) Place Value to the Thousandths (pgs. 26 – 35)	• Two Warm Ups • Place Value Notes - To The Thousandths • Comparing Decimals Notes • Comparing Decimals Toolkit • Two per page. Laminate so dry erase markers can be used. • Place Value with Decimals Practice Worksheet • Comparing Decimals Practice Worksheet • Comparing Decimals Sort Cards • Place Value Quiz
3) Rounding Decimals (pgs. 36 – 46)	• Two Warm Ups • Rounding Decimals Notes • Rounding Decimals Matching Activity • Rounding Decimals Practice Worksheets (2)
4) Base Ten and Expanded Form (pgs. 47 – 65)	• Three Warm Ups • Base Ten and Expanded Form Notes • One with decimals and one with fractions – same content. • Ways to Write Whole Numbers Graphic Organizer • Ways to Write Decimals Graphic Organizer • Base Ten and Expanded Form Practice Worksheet • Base Ten Form Matching Activity • Base Ten, Expanded Form and Rounding Decimals Quiz

5) Properties of Operations
(pgs. 66 – 81)
	• Two Warm Ups
	• Properties of Operations Notes
	• Properties of Addition Fold and Flip Notes
	   • Color or black and white and 3 levels of completion
	• Properties of Multiplication Fold and Flip Notes
	   • Color or black and white and 3 levels of completion
	• Properties of Operations Practice
	• Properties of Operations Quiz

End of Unit (pgs. 82 – 92)	• End of Unit Task • Study Guide/Reference Sheet • Unit Exam

2

Unit 1 : Place Value and Algebraic Thinking

Day 1

Topic: Place Value to the Billions

Resources:
• L1 Warm Up 1
• Pre Assessment
• Place Value Exploration

Day 2

Topic: Place Value to the Billions

Resources:
• L1 Warm Up 2
• Place Value to Notes (2 pages)
• Place Value Pr[...] Whole Numbers (worksheet one[...]

Day 3

Topic: Place Value to the Billions

Resources:

Day 4

Topic: Place Value to the Thousandths

Resources:
• L2 Warm Up 1
• Place Value to the Thousandths Notes
• Place Value Practice with Decimals Worksheet

Day 5

Topic: Place Valu[...] Thousandt[...]

Resources:
• L2 Warm Up 2
• Comparing De[...]
• Comparing De[...]
• Comparing De[...] Practice Works[...]

Day 7

Topic:

Resources:
• L3 W[...]
• Roun[...]
• Roun[...] Prac[...]

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Unit 1 : Place Value and Algebraic Thinking

Day 10

Topic: Base Ten and Expanded Form

Resources:
• L4 Warm Up 2
• Base Ten and Expanded Form with Fractions Notes
• Base Form Matching with Fractions

Day 11

Topic: Base Ten and Expanded Form

Resources:
• L4 Warm Up 3
• Base Ten and Expanded Form Worksheet
• Base Ten and Expanded Form Quiz

Day 12

Topic: Properties of Operations

Resources:
• L5 Warm Up 1
• Properties of Operations Notes
• Properties of Operations Practice Worksheet

Day 13

Day 14

Day 15

Topic: Place Value and Algebraic Thinking Review

Resources:
• Place Value and Algebraic Thinking Assessment

Unit 1 : Place Value and Algebraic Thinking

Tips and Talking Points

LESSON 1 Place Value to the Billions
• Explain that as the students move left across a number, each place value is ten times larger than the one behind it. This spirals back to their knowledge of base ten.

• Misconceptions – Students will often overlook the "tens of" and "hundreds of" place value.

LESSON 2 Place Value to the Thousandths
• Explain that as the students move right across a number, each place value is ten times smaller than the one in front of it. This spirals back to their knowledge of base ten.

• Misconceptions – Understanding that there is no "oneths" place can be confusing for the students since the whole number place value starts with the ones place.

LESSON 3 Rounding Decimals
• Many students need to visualize the rounding process. Have them [...] or underline the place value that is being rounded and then otherw[...] highlight the digit that will tell them which way to round. Encourage[...] to cross out the numbers behind the place value being used to rou[...] they do not get distracted by the additional numbers.

• Misconceptions – Some students believe that 5 – 9 means you roun[...] and 0 – 4 means you round DOWN rather than stay the same.

• Explain the difference between simply expanding a number (pulling[...]

• The commutative property = commute. The numbers can travel around the expression without changing the outcome.

Teacher Resources

Place Value Warm Up To The Billions

Skill : Place Value to the Billions

1) Write the place of the underlined digit and then write the value of the digit.

54,8<u>7</u>0

Place : _____

Value : _____

2) Write the place of the under~~lined~~ digit and then write the valu~~e~~ of the digit.

<u>8</u>,423,646,000

Place : _____

Value : _____

3) Write at least two statements to compare and contrast the value of th~~e~~ underlined digits above.

4) Write the given number using words : 9,445,200

5) Write the given number using words : 7,213,743,002

Place Value Warm

Skill : Place Value to the Bill~~ions~~

1) What is the value of the underlined digit?

54,<u>6</u>78,300

2) What is the v~~alue~~ underlined digit?

1,4<u>0</u>0,540,900

3) Write a number where the digit in the hundreds place is exactly triple the digit in the ones place.

4) Write a number where the digit in the billions place is double the digit in the ten-thousands place and half of the digit in the hundreds place.

~~Comp~~are and contrast the value ~~of the~~ underlined digits.

22,<u>6</u>42,700

6) Compare and contrast the value of the underlined digits.

18,<u>9</u>04,5<u>8</u>0,300

Rounding Decimals Warm Up

Skill : Rounding Decimals

Directions : Round according to the directions.

1. Round to the nearest tenth.

0.356

2. Round to the nearest tenth.

22.805

3. Round to the nearest hundredth.

324.853

4. Round to the nearest hundredth.

164.006

5. Round to the nearest whole

18.099

6. Round to the nearest whole

1,445.999

Properties of Operations Warm Up

Skill : Properties of Operations

1. Write an example of the associative property for each :

Addition : _____

Multiplication : _____

2. Write an example of the identity property for each :

Addition : _____

Multiplication : _____

3. Write an example of the commutative property for each :

Addition : _____

Multiplication : _____

4. Which property is illustrated below?

$(4 + 2) + 3 = 3 + (4 + 2)$

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QUALITY, ENGAGING AND CONTENT-RICH RESOURCES FOR MATH IN THE MIDDLE GRADES!

Warm Ups

Name _____ Date _____

Place Value Notes
To The Billions

Big Idea :
- Place value helps you organize the value of each digit in a number.

Key Words :
- Digit
- Place value
- Value

Place Value :
- Place value represents the value of a digit based on its location in a number
- Explore place value up through one billion.

billions			millions			thousands			on...	
hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones	hundreds	tens
8	7	3	4	2	4	0	0	0	0	0

Explore the number in the place value chart above :

- Written in Standard Form : _____ , _____ _____ _____ , _____ _____ _____ , _____ _____ _____

- How do you say it?
  - _____ billion, _____ _____ _____
    _____ _____ _____ thousand.

- Each "period" on the place value chart is broken down into three values.
  - List each period on the chart above.

Name _____

Place Value N...

Moving Left and Right :
- The value of each digit is 10 times larger than the digit ...

Billions	Hundred millions	Ten millions	Millions	Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Ones
÷ 10	÷ 10	÷ 10	÷ 10	÷ 10	÷ 10				
x 10	x 10	x 10	x 10	x 10	x 10	x 10	x 10	x 10	x 10

- The value of each digit is 10 times smaller than the digit in the place before it.

Practice : Write two statements comparing the underlined digits in each number.

1. 5,426,512

2. 42,345,800,231

_____

Practice : Complete the table.

Name _____ Date _____

Rounding Decimals

Big Idea :
- Place value helps you organize the value of each digit in a number.

Key Words :
- Decimal
- Decimal point

Explore :
- Anika is trying to figure out the cost of fruit. When she multiplies the cost per pound by the number of pounds (1.35) she is purchasing, she gets $2.6865.

  - Does it make sense for her to think she will pay $2.6865 for the fruit?

  - Explain. _____

  - What place value should she round to? _____

  - Explain. _____

  2   2.1   2.2   2.3   2.4   2.5   2.6   2.7   2.8   2.9   3

- Use the number line above to determine how much will Anika pay for the f...

See it, Try it :
- Underline the digit in the place you are rounding to.
- Circle the digit that will tell you to round up (digits _____ - _____) or stay the s... (digits _____ - _____).
- Re-write the digit in the underlined place if necessary, change all numbers behi... zero.

Name _____ Date _____

Base Ten & Expanded Form Notes
With Fractions

Big Idea :
- Base ten form is the sum of the products of each digit and its place.
- Expanded form is the sum of the values of each digit.

Key Words :
- Digit
- Place

Explore :
- How would you break apart $14.45 into bills and coins? _____ + _____ + _____ + _____
- This time break it down based on the value of each place.

  This is **expanded form.**

  - ✓ _____ ten dollar bills = _____ x 10
  - ✓ _____ one dollar bills = _____ x 1
  - ✓ _____ dimes = _____ x 0.10
  - ✓ _____ pennies = _____ x 0.01

- By breaking down the $14.45 into bills and coins, you broke it do... of the digit in each place. The sum of those individual multiplica... original amount.

  _____ + _____ + _____ + _____

  The problem above is written in **base ten f...**

Try it :
Write the number **102.805** in the place value chart.

Write a number ...

Properties of Multiplication

Commutative

Associative

Identity

Properties of Addition

Commutative

Associative

Identity

Comparing Decimals Toolkit

Number Line

...e Chart

Base Ten Models

Billions Period	Millions Period	Thousands Period	Ones Period

Place Value

Properties of Addition

Commutative

Associative

Notes

The Place Value Game ~ Partner Game Board

Player 1

16 15 12

Player 2

14

Is your number LARGER or SMALLER than your partner's?

Is your number LA... than your...

Write your number in expanded form :

1000 + 600 + 10 + 5 + 0.1 + 0.02

1000 + 400 + ...

Write your number in base ten form :

$(1 \times 1000) + (6 \times 100) + (1 \times 10) + (5 \times 1) + (1 \times \frac{1}{10}) + (2 \times \frac{1}{100})$

$(1 \times 1000) + (4 ... + (1 \times 1) + ...$

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Name _____ Date _____

Rounding Decimals Practice

Directions : Using a pencil and paper clip, spin the spinner to the right for each number. Round the number according to the place value indicated by the spinner.

1) 9.235 = _____

2) 15.820 = _____

3) 3.088 = _____

4) 65.855 = _____

5) 76.333 = _____

6) 815.518 = _____

7) 118.387 = _____

8) 67.048 = _____

9) 4.529 = _____

Round to the nearest...

Whole Number

Tenths Place

Hundredths Place

15) 14.003 = _____

Name _____ Date _____

Place Value Practice
With Whole Numbers

Directions : Fill in the blanks with the missing numbers. Write out the number in written form.

❶ 763 = 700 + 60 + [ ]

❷ 15,830 = [ ] + 5,000 + [ ] + 30

❸ 4,998 = [ ] + 900 + 90 + [ ]

❹ 806,700 = [ ] + 6,000, + [ ]

❺ 3,550,800 = 3,000,000 + [ ] + [ ] + 800

❻ 745,000,050 = 700,000,000 + [ ] + 5,000,000 + [ ]

❼ 32,600,110 = [ ] + [ ] + 600,000 + 100 + [ ]

Name _____ Date _____

Base Ten & Expanded Form Practice

Directions : Read each question carefully.

1. Write in base ten form using decimals.

4.874

2. Write in expanded form.

705,300

3. Write in base ten form using fractions.

12.80

4. Write in standard form.

$(2 \times 1,000) + (4 \times 1)$

5. Write in standard form.

$(7 \times 10,000) + (9 \times 1,000) + (4 \times 100) + (3 \times \frac{1}{10})$

6. Write in standard form.

$(9 \times 1) + (6 \times \frac{1}{...}) + (2 \times \frac{1}{...})$

Directions : Think of a number th...

7. When rounded to the neares... number is 14.89

8. When rounded to the neares... number is 9.2.

Worksheets

Place Value Quiz

Name _____ Date _____ Score:

Directions : For numbers 1 – 3, fill in the blanks with the missing numbers. Write out the number in word for...

1) 7.63 = 700 + ☐ + ☐ = _____

2) 2,904 = 2,000 + 900 + ☐ =

3) 0.998 = ☐ + ☐ + ☐ =

4) Compare and contrast the value of the underlined digits in 4,325,400. _____

_____

Directions : For numbers 5 – 6, write the place of the underlined digit in each number and then write the value of the digit.

5) 285,700,000   6) 24.496

Place : _____   Place : _____

Value : _____   Value : _____

Name _____ Date _____

Base Ten & Expande...

Directions : Complete the table for numbers 1 – 5.

	Standard Form	Expanded For...	
1)	1,408		
2)		800 + 40 + 0.07	
3)		5 + 0.4 + 0.009	
4)	14.754		
5)	6,000.008		

...ound to the nearest tenth.   7) Round to the nearest hundredth.
18.048   1,234.543
☐   ☐

...ound to the nearest tenth.   9) Round to the nearest whole number.
19.653   4.095
☐   ☐

Think of a number that meets the criteria below.
• When rounded to the nearest tenth, this number is 4.5
• When rounded to the nearest whole number, this number is 4.

Properties of Operations Quiz

Name _____ Date _____ Score :

1) Which equation shows the commutative property of multiplication?
   a) 8 x 1 = 8   c) 8 x (2 x 3) = 8 x (2 x 3)
   b) 8 x 2 x 3 = 3 x 2 x 8   d) 8 x 2 − 8 x 3 = 8 x 3 − 8 x 2

2) Which equation shows the associative property of addition?
   a) 4 + 5 + 3 = 3 + 4 + 5   c) 5 + 0 = 5
   b) (4 + 5) + 3 = (5 + 4) + 3   d) (4 + 5) + 3 = 4 + (5 + 3)

3) Which equation shows the identity property of addition?
   a) 9 + 0 = 9   c) 9 + 1 = 10
   b) 9 x 1 = 9   d) 9 + 8 + 1 = 1 + 9 + 8

4) Which equation shows the associative property of multiplication?
   a) 2 x 3 x 4 = 4 x 2 x 3   c) 4 x 2 = 2 x 4
   b) 4 x 1 = 4   d) (2 x 3) x 4 = 2 x (3 x 4)

5) Which property is shown? (3 x 2) x 8 = 8 x (3 x 2)
   a) Associative Property   c) Identity Property
   b) Commutative Property   d) Multiplication Property

6) Which property is shown? 12 x 1 = 12

Place Value and Algebraic Thinking END OF UNIT TASK Teacher Prep

THE PLACE VALUE GAME

Objective :
• Students will use what they know about place value, comparing decimals, expanded form, and base ten form to play a card game.

Prep :
...opy and cut one set of cards for each pair of students. The two digit cards are ...eant to be used and take up two places. So, a 14 and a 16 placed next to each ...her in front of the decimal would be read as 1,416. If you do not wish to use the two ...git numbers, you can simply not give those to your students.

...minate the Partner Game Boards or place them in a sheet protector so students ...an use dry erase markers.

...udent Steps :
...ach student picks three c...
...ake the biggest number...
...ey complete the bottom...
• Circle whether their...
• Write their number in...
• Write their number in...
  decimal or fraction f...
...student response sheet i...

Place Value and Algebraic Thinking ▶▶▶▶▶▶▶▶▶▶▶▶▶ Assessment

Name _____ Date _____ Score :

1) Write the given number in expanded form :   2) Write the given number in expanded form :
   1,602   14,530,900

   _____   _____

3) Compare and contrast the value of the underlined digits in 14,325,420.

_____

_____

Directions : For numbers 4 – 5, write the place of the underlined digit in each number and then write the value of the digit.

4) 15,436   5) 104.42

Place : _____   Place : _____

Value : _____   Value : _____

Directions : For numbers 8 – 12, compare each number using < , > , or = .

9) 71.8 ☐ 71.705   10) 21.13 ☐ 21.103

Assessments

Math Curriculum

Grade 5

$\frac{2}{9} + \frac{5}{9} = \frac{7}{9}$

$1\frac{1}{8} + \frac{3}{8} = 1\frac{4}{8} = 1\frac{1}{2}$

$\frac{3}{4} + \frac{1}{6} = \frac{9}{12} + \frac{2}{12} = \frac{11}{12}$

$2\frac{1}{4} +$

$1\frac{1}{4} + 3\frac{5}{6} = 1\frac{3}{12} + 3\frac{10}{12}$

$= 4\frac{13}{12}$

$= 5\frac{1}{12}$

$3\frac{3}{3}$

Unit 1 : Place Value and Algebraic Thinking

Unit 1 — Place Value and Algebraic Thinking

Unit 1 — Place Value and Algebraic Thinking

Unit 1 — Place Value and Algebraic Thinking

Place Value and Algebraic Thinking

5th Grade Math Curriculum

5th Grade Math Unit 1
Place Value & Algebraic Thinking

STUDENT TRACKING

Name	Pre Assessment	Post Assessment	Notes

Unit ONE Lesson FOUR
Base Ten & Expanded Form

STUDENT TRACKING

Name	Warm Up 1	Warm Up 2	Warm Up 3	Notes

BEYOND THE WORKSHEET

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Tracking Sheets & Binder Labels

Place Value & Algebraic Thinking
▶▶▶▶▶▶▶▶▶▶▶ 5th Grade M...

VOCABULARY	OBJECTIVES
➢ Associative property ➢ Commutative property ➢ Decimal ➢ Decimal point ➢ Digit ➢ Expanded form ➢ Identity property ➢ Place value ➢ Value	• Recognize place value • Explain patterns in the number of zeroes when numbers are multiplied divided by powers of te... • Read and write decimal the thousandths using ten and expanded for... • Compare two decimal... • Use place value to rour decimals to any place. • Understand and use properties of addition multiplication (associat commutative and ider... • 5.NBT.1 • 5.NBT.2 • 5.NBT.3 • 5.NBT.4

Name_____ Week of _____ to _____

▶▶▶▶ Weekly Warm Up Sheet

Date:
Date:
Date:
Date:

COMPLETELY EDITABLE
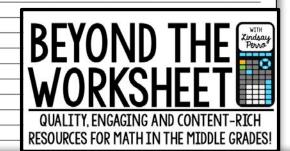
Place Value and Algebraic Thinking

Lesson 4 :
Base Ten & Expanded Form

Suggested Time Frame : 3 Days

Resources Included:
• Three Warm Ups
• Base Ten and Expanded Form Notes
  • One with decimals and one with fractions – same content.
• Ways to Write Whole Numbers Graphic Organizer
  • Color or black and white
• Ways to Write Decimals Graphic Organizer
  • Color or black and white
• Base Ten and Expanded Form Practice Worksheet
  • Can be used for classwork or homework
• Base Ten Form Matching Activity
  • Base ten form cards come in both a fraction and a decimal version
• Base Ten and Expanded Form Quiz

Place Value And Algebraic Thinking Lesson Plan

_ard(s): _____ Date(s): _____

_nt Materials:

☐ _culator   ☐ Scissors   ☐ Compass   ☐ _____
☐ _red pencils ☐ Glue   ☐ Graph paper ☐ _____
☐ _er   ☐ Protractor ☐ Dry erase   ☐ _____

_n Progression:
_____
_____
_____
_____

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Planning Pages