

# King Arthur Math

---

## SAMPLE PAGES

Welcome to King Arthur Math! In this three-week main lesson you'll introduce your child to the wonderful world of fractions. This is an exciting step for your fourth grader! In order to make it a *positive* step, we are going to follow a few key principles of Waldorf-inspired math teaching. In this block we will:

- Take a slow and steady approach
- Begin with hands-on experience with fractions
- Move from concrete understanding to abstract skills
- Engage our students with lively, active, imaginative lessons

In this block we're laying the foundation for working with fractions by exploring the basic concepts: what fractions are, how they're expressed, how to compare them, equivalents, and simple addition and subtraction.

## OBJECTIVES

1. Learn and practice long multiplication, while building number sense, understanding of place value, arithmetic skill, and confidence.
2. Introduce a new world of numbers—fractions
3. Lay a solid foundation of basic fraction concepts, including vocabulary
4. Learn to compare fractions and make equivalents using manipulatives
5. Introduce number lines and the greater than/less than symbols
6. Learn addition and subtraction with like fractions (same denominator)
7. Enjoy the legends of King Arthur!

# TABLE OF CONTENTS

King Arthur Math	2
Block Overview	2
How to Teach King Arthur Math	7

Main Lessons	10
WEEK ONE	10
WEEK TWO	18
WEEK THREE	26

Math Worksheets	33
Set One	33
Set Two	46

Stories	67
The Birth of King Arthur	67
The Sword in the Stone	69
Excalibur	74
Camelot	78
Sir Balyn	81
Sir Lancelot	85
The Kitchen Knight	90
Sir Percival	96
The Grail Quest	103
Morgana Le Fay	109
Guinevere	113
Camlann and Avalon	118

Pictures	123
----------	-----

# SAMPLE DAILY LESSON

## Lesson 2

### Skills Work

Continue to practice long multiplication during your Skills Work time at the beginning of each main lesson, moving at your child's pace (see the Worksheets section for lots of step by step guidance and practice).

### Review, Extend, and Explore

Recall yesterday's story. Arthur was raised in the home of the good and kind Sir and Lady Ector as their own foster son, with their older son Kay. Ector was a knight, and he raised Arthur and Kay to be knights as well. The boys had to study and train and work hard with their tutors. They also had plenty of time to roam the castle, and the fields and woods nearby. Growing boys are hungry, and they learned early to make friends with the cook and make themselves useful at baking time. Cook was a jolly man who liked the boys and often baked extra pie or cake for their afternoon snack. He would tease them, though!

Cook might say, "I have quite a lot of people to feed! I can only offer you one twelfth of this pie. Oh, that is to share, so you each get only one twenty-fourth!"

Or he might say, "What a busy day this is, and you are growing just fine it seems. I guess you could have one sixteenth of this cake to share. One thirty-second for each of you!"

But they knew he was only teasing, and he let them eat as much as they liked.

Cut a round pie, cake, or pizza into sixteenths (or draw this as a picture on the chalkboard). Go slowly step by step together so your child can problem-solve how to do this. You'll cut in half, then half again, and so on until you have sixteen equal pieces.

Use fraction language as you go and check for understanding. Be sure your child understands, for example, that when you have eight equal pieces, each piece is one eighth of the whole (and check that he can write this fraction correctly). Notice again that as you cut into more pieces, the pieces are smaller but the number on the bottom of the fraction is larger. Once you have sixteenths, ask “How would we make thirty-seconds?”

Also count slices and show these fractions on the board. You might ask, “How many slices would you like to eat? Two? So that’s two sixteenths of the pie.” Or “How many do you think Kay could eat if he’s hungry? Fifteen? That’s fifteen sixteenths of the pie.” You can notice out loud that four sixteenths of the pie is the same as one quarter and eight sixteenths is one half (for example). We’ll be working much more with equivalents in future lessons.

Next, cut a different round pie, cake, or pizza into twelfths (or draw this as a picture on the chalkboard). Go slowly step by step together so your child can problem-solve how to do this. You might cut into quarters and then each quarter into thirds, but let your child find the best way. If Cook decided to tease the boys and cut into twenty-fourths, what would he do next? How do we write one twelfth on the board? One twenty-fourth? Eight twelfths? Five twenty-fourths?

Ask your child to show you two twelfths of the pie. If you were to eat two twelfths, how much would be left? Go through a few examples like this.

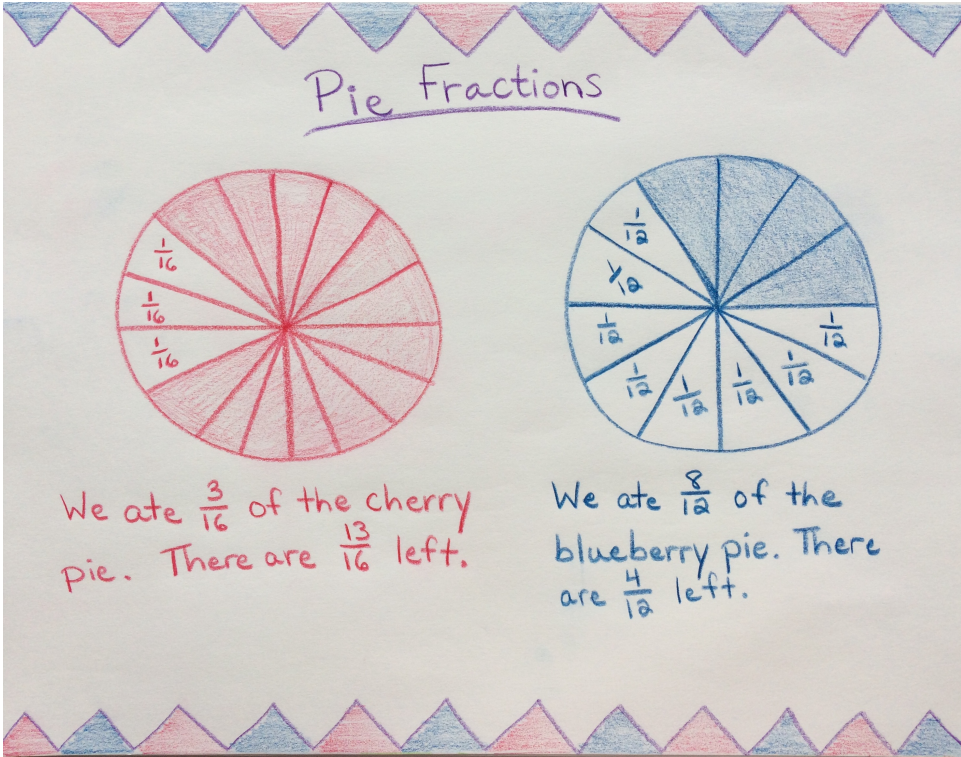
## Main Lesson Book

Create a Pie Fractions page (or whatever fits your lesson from today). Draw and label fractional parts.

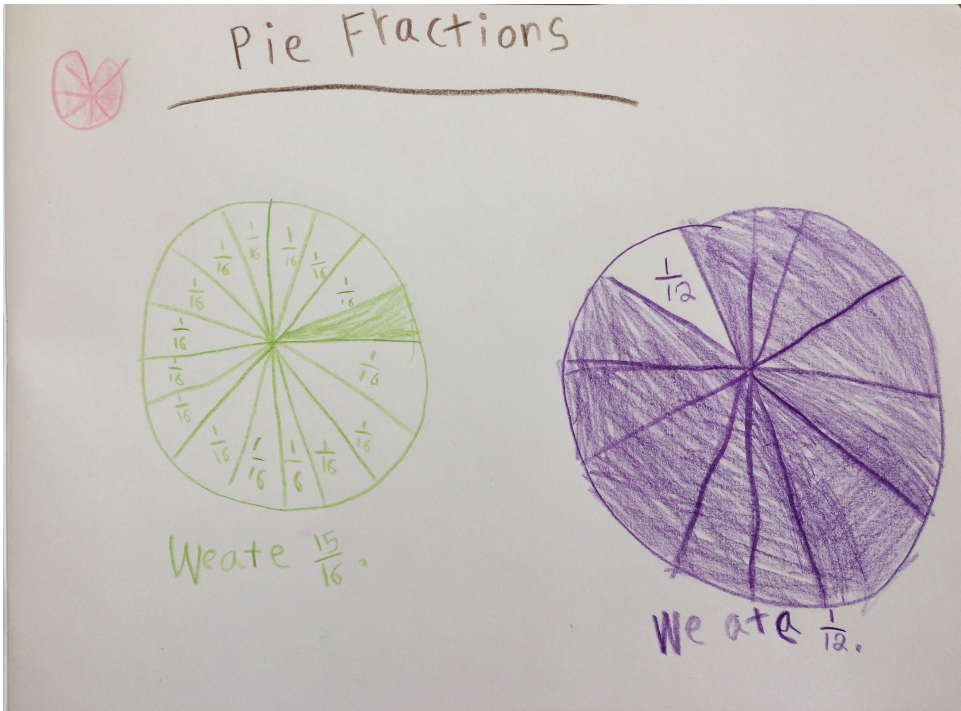
## Tell Story

Tell the story of The Sword in the Stone.

# SAMPLE PICTURES



Kelly's page



Sierra's page

## SAMPLE STORY

### The Sword in the Stone

Soon after Arthur was secreted away, Igraine was crowned Queen at Castle Carleon. She and King Uther desperately hoped that Merlin had been mistaken, and that they would have many years together, many sons and daughters, and would one day bring Arthur home as heir to the throne. But this was not to be. When Arthur was only two years old, safe at the home of Sir Ector, and all the world ignorant of his birth, Uther Pendragon took ill with a fever and never recovered.

The great king died in his prime, and Britain descended into chaos. There were battles for land and power. Norse raiders returned to the shores. Lawlessness prevailed in the woods and hills and towns as it became clear that none of the kings or nobles had the respect and strength to unite the others. None of these kings knew that Uther had had a son.

Tucked away in a safe, quiet corner of Britain, far from the coasts and the battles between kings, Arthur and Kay grew up. They had a tutor, called Emrys, to teach them languages, reading and writing, poetry, music, astronomy, mathematics, and history. He was a bit of an odd old man, ancient but quite nimble on his feet, kind but quite serious. He was protective, of Arthur especially, and seemed to appear suddenly, usually when the boys were about to do something fun and mischievous, like sneaking two horses from the stables for a fast ride after dark.

They had another tutor as well, the youngest son of a powerful knight. He had no land of his own and so he lived with Sir Ector and trained the boys. He taught them to ride horses, to wrestle and swim, to joust and fight with sword and spear. The boys learned to serve as a squire. They learned courtly manners and the knight's code of honor—they must always be honorable, brave, and true. They must protect the weak, come to the aide of ladies in need, be courageous in battle, and always fight fair.

Arthur excelled. He was tall for his age, strong, good with the sword, and fast on a horse. He could always keep up with his older brother. Luckily, he was so good-natured and well liked that Kay was never jealous, but was proud of his younger brother.

When Kay came of age, he was knighted. Sir and Lady Ector, with their household, even old Emrys, traveled to Winchester at Christmas for Sir Kay's first tournament. Arthur would serve as his squire. As squire, Arthur would care for Kay's horse, armor, and weapons, and he would be able to watch the tournament games up close. He hoped to become a knight himself in just three years.

When they arrived in Winchester, the town was abuzz with preparations for the tournament. The streets were crowded with knights and nobles who had come to compete, and their families and servants, and stable boys leading their horses. There was a sea of tents set up near the fair grounds, with colorful banners waving high. There were entertainers and jesters jostling for attention from the crowd and hoping for coins. People said even the famous wizard Merlin, who had scarcely been seen since the death of King Uther, had arrived that day. He was meeting with the Archbishop to discuss finding a new High King to bring peace and order back to the land of Britain.

On Christmas Day, Sir Ector and Sir Kay went to the service in the great cathedral of Winchester. The cathedral was packed wall to wall with knights and lords, so the rest of the family and household stayed home. When the Archbishop finished the service and led the procession out to the courtyard, the people found something strange and wonderful there. There was a great stone, and in it a beautiful sword, stuck fast. On the stone was inscribed, "Whosoever shall pull this sword from the stone shall be the rightful King of all Britain."

Naturally, the knights and lords crowded round the stone and each wanted their turn to prove their strength. But from the strongest to the least, the most noble to the most common, none could pull the sword free. Gradually the crowd diminished as each man left in frustration, hopes dashed. But perhaps, the people began to murmur amongst themselves, perhaps the champion of tomorrow's tournament

would return to claim the sword. By cold twilight, the courtyard was left empty, save for the Archbishop and the wizard. The Archbishop nodded a solemn good night to Merlin, and it is possible that Merlin winked back.

All the people gathered to watch the tournament next day. Sir Kay was young and inexperienced, but he had been trained well. He made his family proud at the games, and caught the attention of several of the young men and ladies. But then, perhaps foolishly, he agreed to sword combat with a much older and more practiced knight. Kay fought with all his might to prove his strength, until his sword was broken, and the older knight laughed and withdrew. A bit relieved to have come through unscathed, still Kay did not want to be out of the rest of the competition. He called to Arthur to find him another sword.

Arthur could not find a sword at the tournament, so he ran back to the town. The smithies were closed, and everyone was at the fairgrounds. But as he ran past the cathedral he saw the beautiful sword just waiting there in the courtyard. He wanted so much to help his brother that he thought, "What harm can it do to borrow this sword for one day? For surely there is no one at the church in need of a sword." And so he ran to the stone and pulled out the sword, then hurried back to the tournament.

When Kay saw the sword in his brother's hand, he recognized it at once. Eyes wide, he reached out and took the sword without a word. He didn't notice his father approaching them until Sir Ector said suddenly, "Where did you get that sword?"

Kay was startled out of his reverie and said "From the churchyard, Father." Sir Ector promptly demanded his sons return to the churchyard with him. All the way they walked in silence. Kay was wishing so hard that it had been he who had pulled the sword that he almost believed it was so. Arthur did not realize the significance of the sword at all but was now sure he had done something wrong in taking it.

When they reached the cathedral, Sir Ector commanded Kay to return the sword to the stone. But of course he could not. And so he asked once again, "Son, where did you get that sword?"



Kay bowed his head and said, "Father, it was Arthur who brought me the sword."

Finally Arthur broke his silence. "Oh Father, I am sorry! I didn't know it was wrong to take the sword! I thought that no one at the church would need it today and we could bring it back tomorrow."

Sir Ector had the strangest look on his face. Arthur didn't know what to think. The old knight commanded his foster son to return the sword to the stone and then to pull it out again. Arthur did so easily. And when he turned around again to face his father and brother with that beautiful sword in his hand, he was amazed to find them both kneeling before him. Arthur's head began to swim.

"Son," said Sir Ector, "Read the inscription on the stone."

Arthur read it twice and three times. *Whosoever shall pull this sword from the stone shall be the rightful King of all Britain.* Confusion and anger and excitement swirled through Arthur's mind. He saw Kay glowering at the ground, looking as confused and angry as he felt. He cried out, "But Sir, this could not possibly mean me! I am your foster son, not of high birth, untested, and not yet even a knight."

Sir Ector rose and went to embrace his son. "It is time to tell you boys the story of Arthur's birth." And so he told them of Uther's love for Igraine. Of the death of Gorlois and the secret marriage at Tintagel. Of Arthur's birth and Merlin's warning. And of the day that Merlin arrived at Sir and Lady Ector's doorstep with a tiny baby and an enormous secret.

"Arthur," Ector said, "You are the true-born son of King Uther Pendragon and Queen Igraine and you are the rightful heir to the throne. When Merlin left you in my keeping I did not know what the future might hold for you. But now it has all become clear. You must be High King and unite the land of Britain. I have raised you as my own dear son, and now you are my King."

Now Sir Kay went and embraced his brother, saying, "You are the true king, I can see that now, and no one is worthier."

By now the Archbishop and Merlin had joined them there. The boys were awestruck to be in the presence of the famous wizard, and yet all the same they had the strangest feeling that they had known him their entire lives. He smiled and his eyes twinkled as he repeated their father's story. Then the Archbishop took the sword and with it knighted Arthur, right there and then in the courtyard of the cathedral of Winchester. Then Arthur replaced the sword in the stone.

The next day the Archbishop had the cathedral bells ring at dawn and sent word to all the knights and lords to gather again. The champions of the tournament strutted in, confident and ready to try their hand at the sword. Noblemen who had missed the chance the first time were eager to try. The crowd was so brimming with excitement that it took Merlin sending up a flash of light and a puff of smoke to quiet them all and call attention.

The Archbishop called men one by one to approach the sword. And once again, one by one, the strongest and most powerful men failed. When the Archbishop called "Sir Arthur," all eyes turned to stare at this unknown and very young-looking knight. Arthur walked to the stone and easily pulled the sword. The crowd exploded, letting out cheers and gasps of dismay in equal measure.

Once again Merlin stepped forward and brought the crowd to a hush. The old wizard spoke loudly and clearly, eyes flashing. He told the story of Arthur's birth and how he was raised in secret by Sir Ector. Many in the crowd cheered, overjoyed to find that the great and beloved Uther had had a son, and he was here now, ready to take the throne! Many others grumbled and shouted, angry and disbelieving that this young unknown man should be their king. Sirs Ector and Kay stepped forward and knelt before Arthur. Many others came and did the same. Yet still the grumblers held back and refused to acknowledge him. And so the Archbishop told the crowd to disperse and to send word round all of Britain that another tournament would be held at New Year's, and another chance to draw the sword.

Just before Sir Ector and his sons left to return home, Merlin came to Arthur and said, "You will one day soon be High King of all Britain, and through it all, I will be by your side."