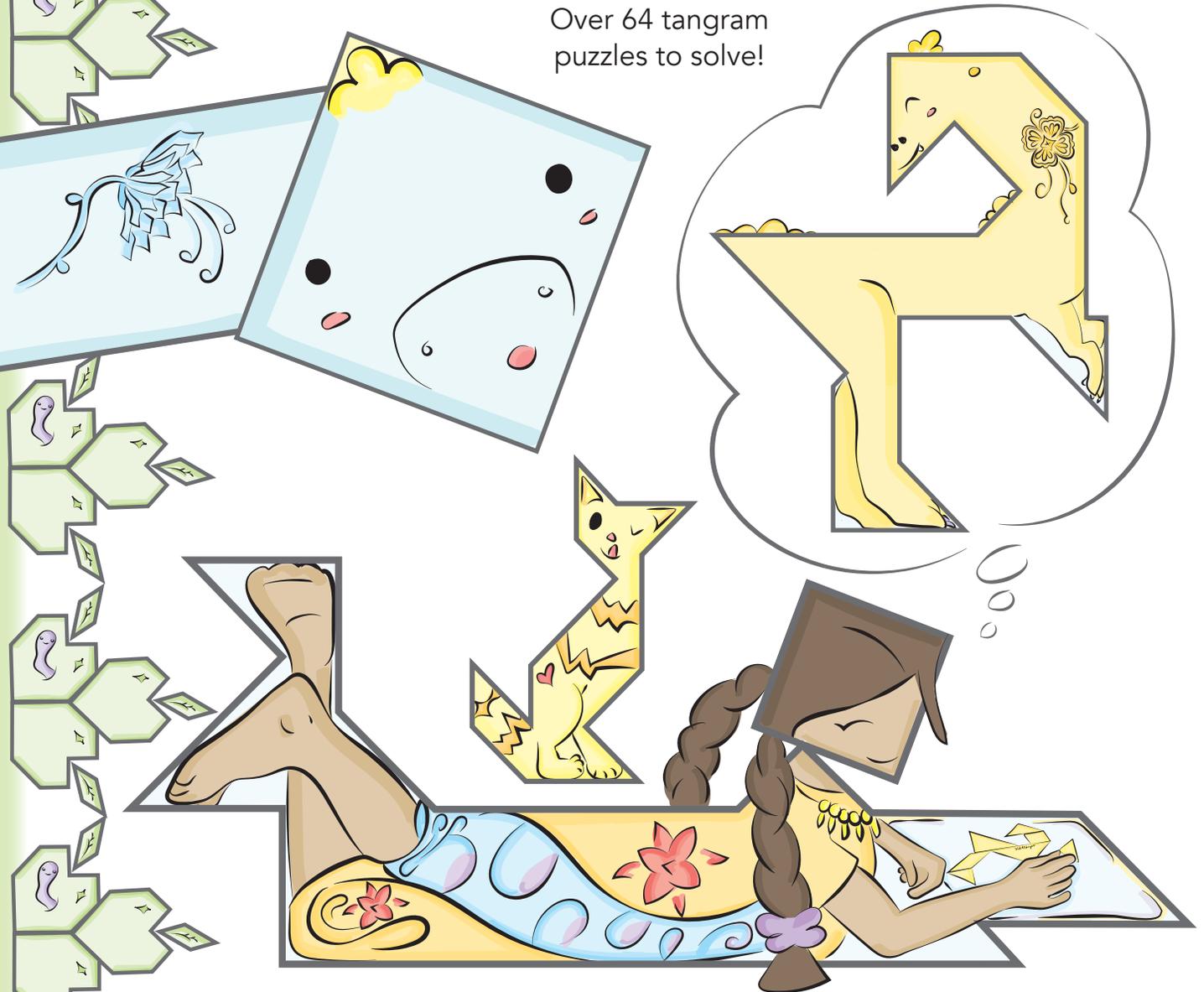
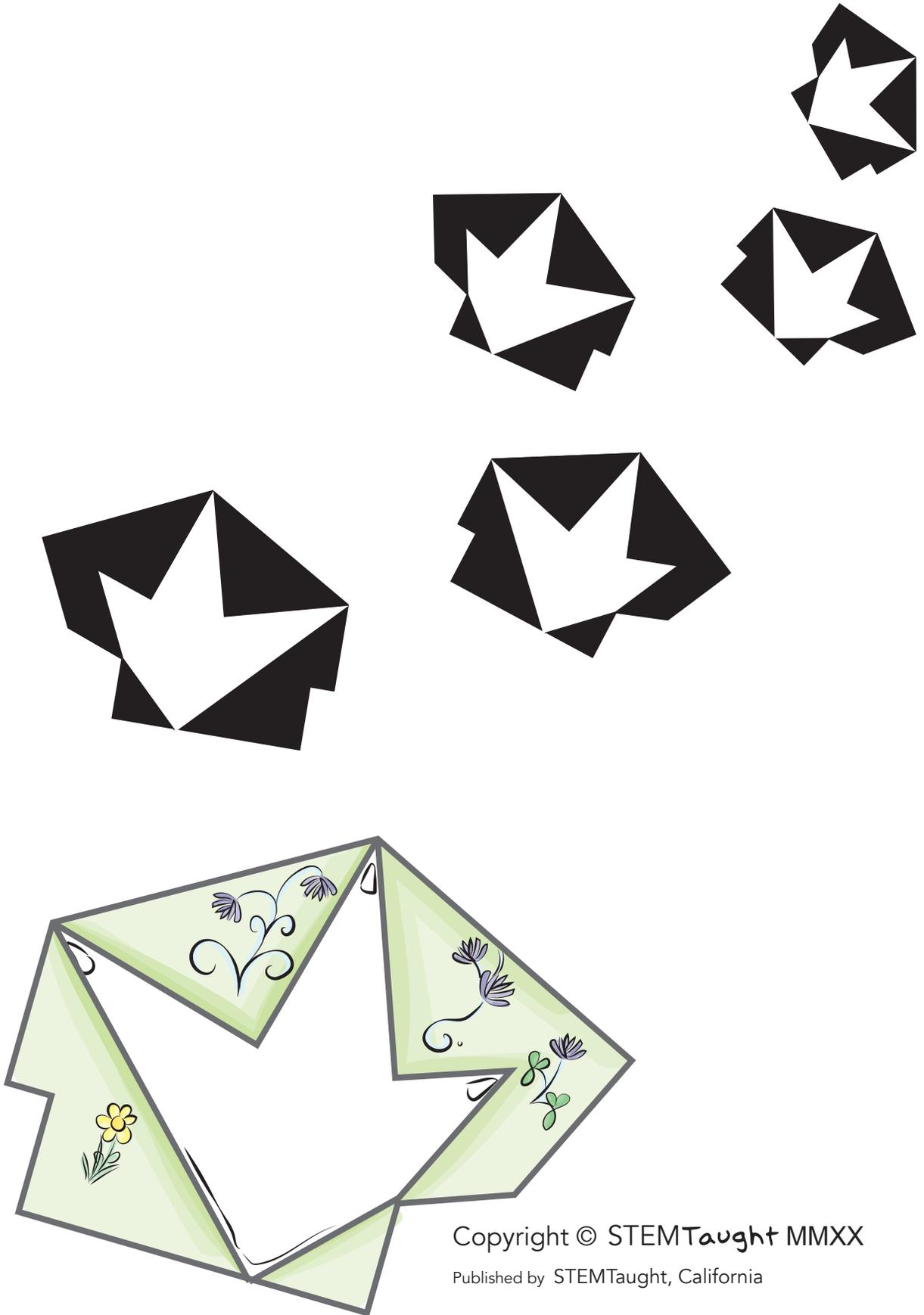


KHOOR'S MAGIC TILES

Over 64 tangram
puzzles to solve!

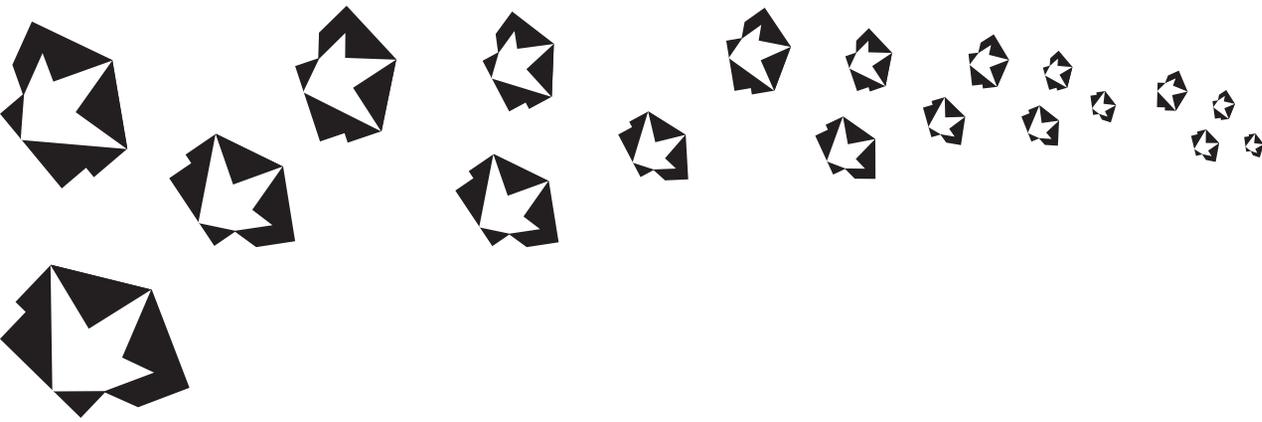


Aysha Imtiaz • Beth Hunter • Jake Hunter



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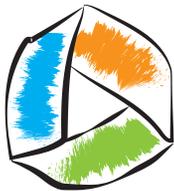


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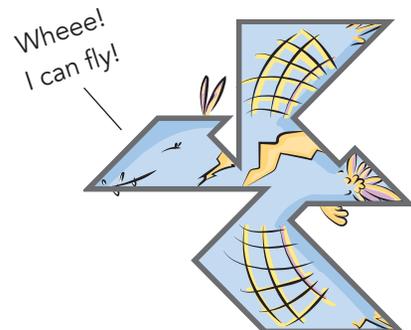
All work is written for STEMtaught. All authors and illustrators provide rights solely to STEMtaught. This book is for use in schools and in the home in conjunction with the STEMtaught Journal articles which are aligned with the Next Generation Science Standards (NGSS). This book correlates with the STEMtaught Journal article, "The Parts That Make Things."



STEMtaught® Next Generation Science

Matter and Its Interactions 2-PS1-3.

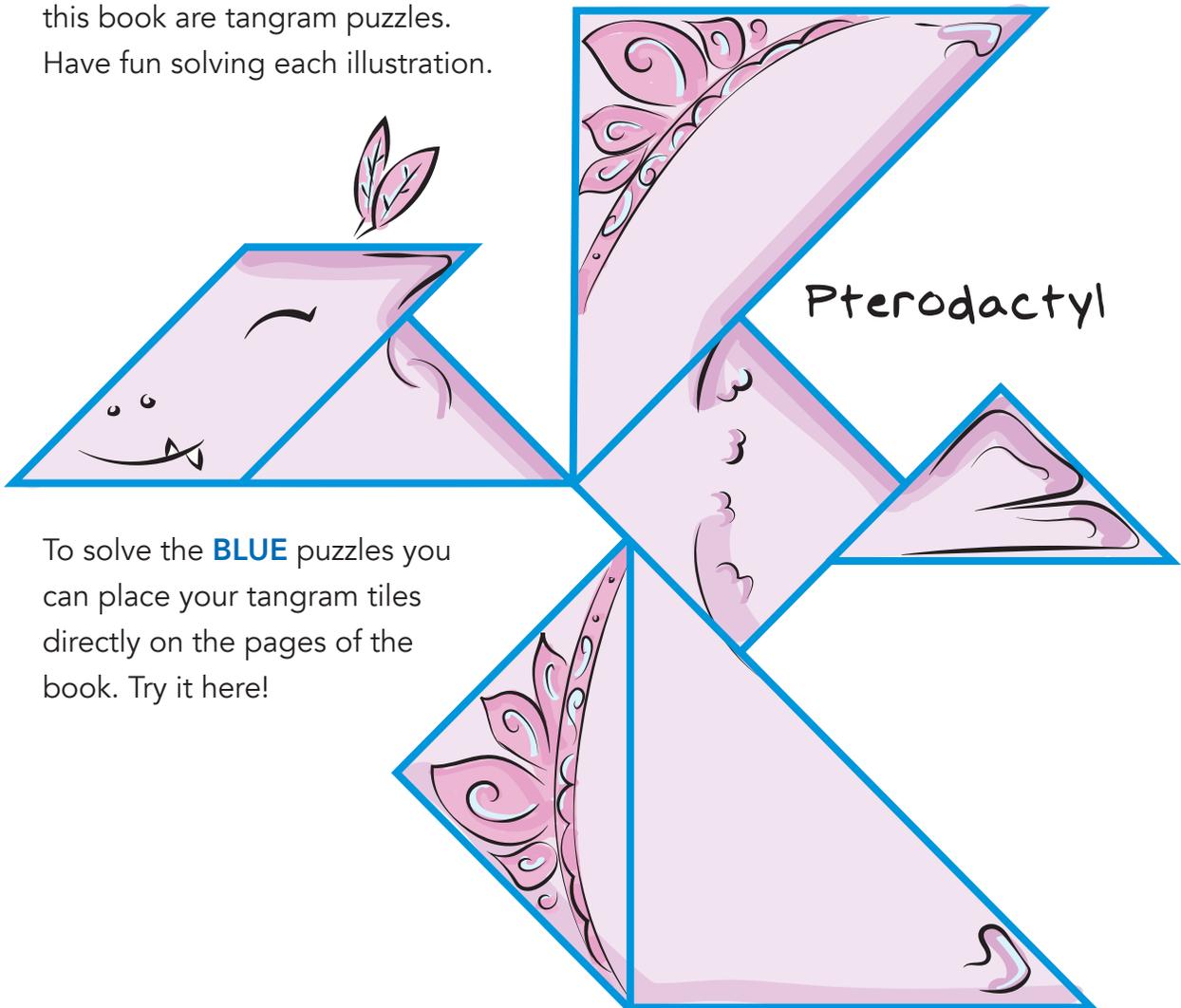
Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.



TANGRAM TILES

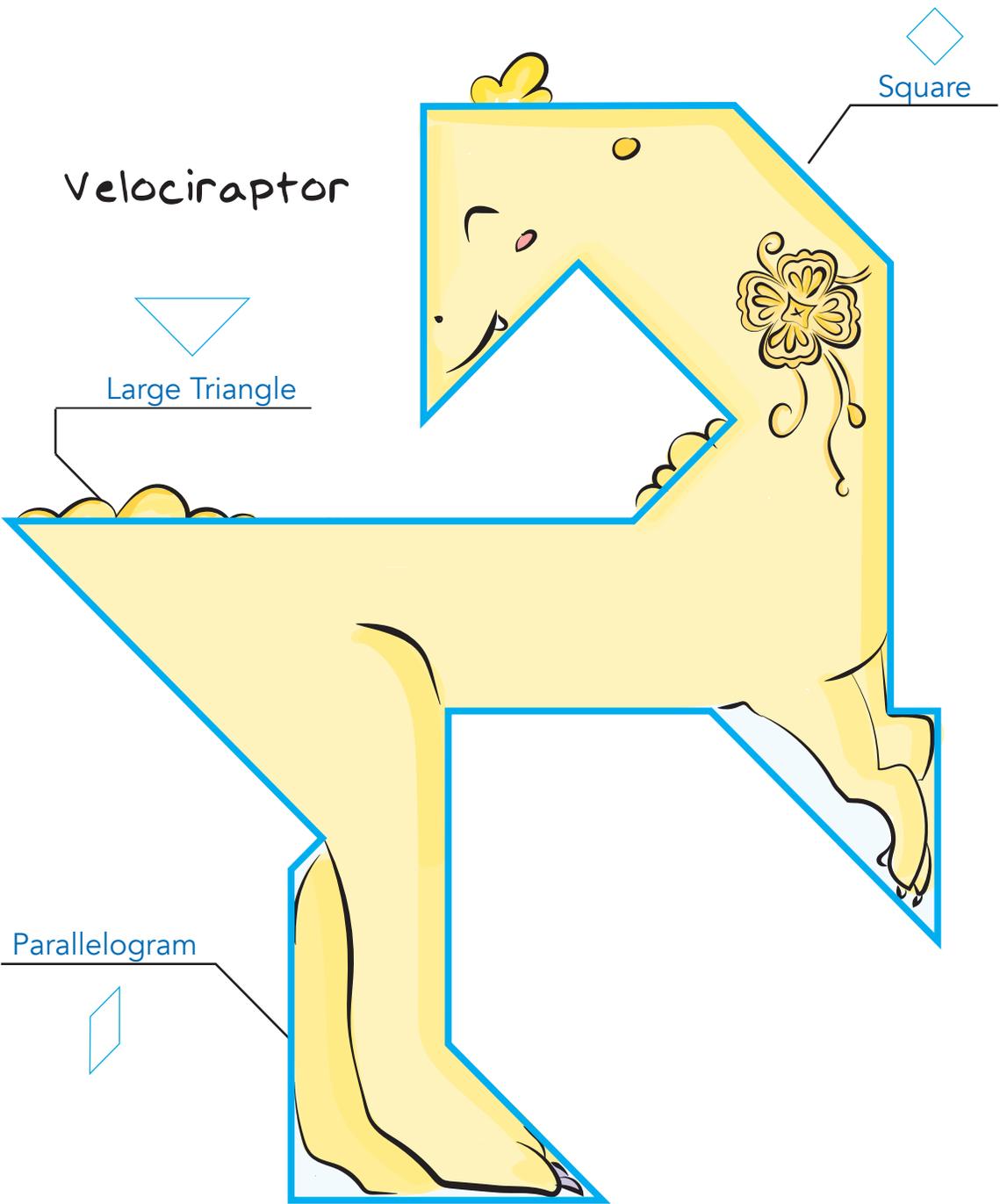
Some beautiful designs are made using tangrams. Tangram puzzles were invented in China more than 700 years ago. The ancient Chinese called them Pinyin tiles. Designs made with tangram tiles use seven small pieces. They can be put together in many different ways.

All the shapes and characters in this book are tangram puzzles. Have fun solving each illustration.

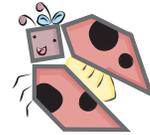


To solve the **BLUE** puzzles you can place your tangram tiles directly on the pages of the book. Try it here!

Pterodactyls and velociraptors are extinct creatures that roamed the Earth more than 200 million years ago. Try making a velociraptor from tangram tiles.



May Noor's light work to change the world and make it a more inclusive and beautiful place.



Aysha Imtiaz

When Aysha is writing, she has an imagination as big as the world. She was raised in Sacramento California and now lives in Karachi Pakistan where she teaches English Language Arts to 5th grade students. Every day in her classroom is like magic!



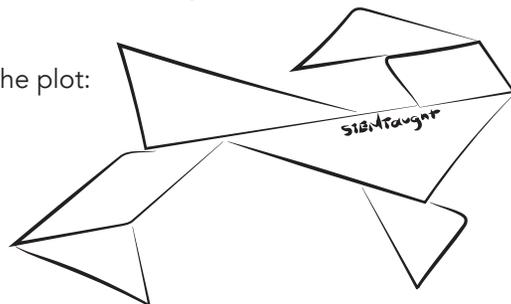
Beth & Jake Hunter

Jake is a mechanical engineer and Beth is a geologist. They love to adventure and rock climb with their family in California. As the founders of STEMtaught, they bring the wonder of hands-on discovery to elementary school students.



Special thanks to these doodlers for helping with the illustrations:
Toben, Lilly, and Bella Hunter, and Muntaha, Mahad, and Rayyan Saquib.

Special thanks to these storytellers for helping with the plot:
Nikki Marshall, and Bella Hunter.

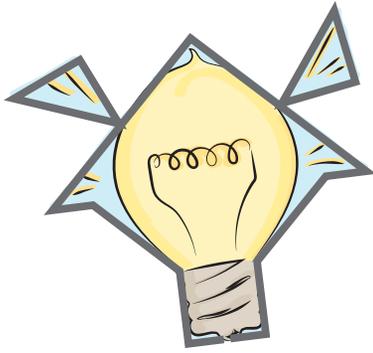
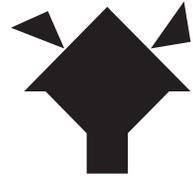


NOOR'S MAGIC TILES

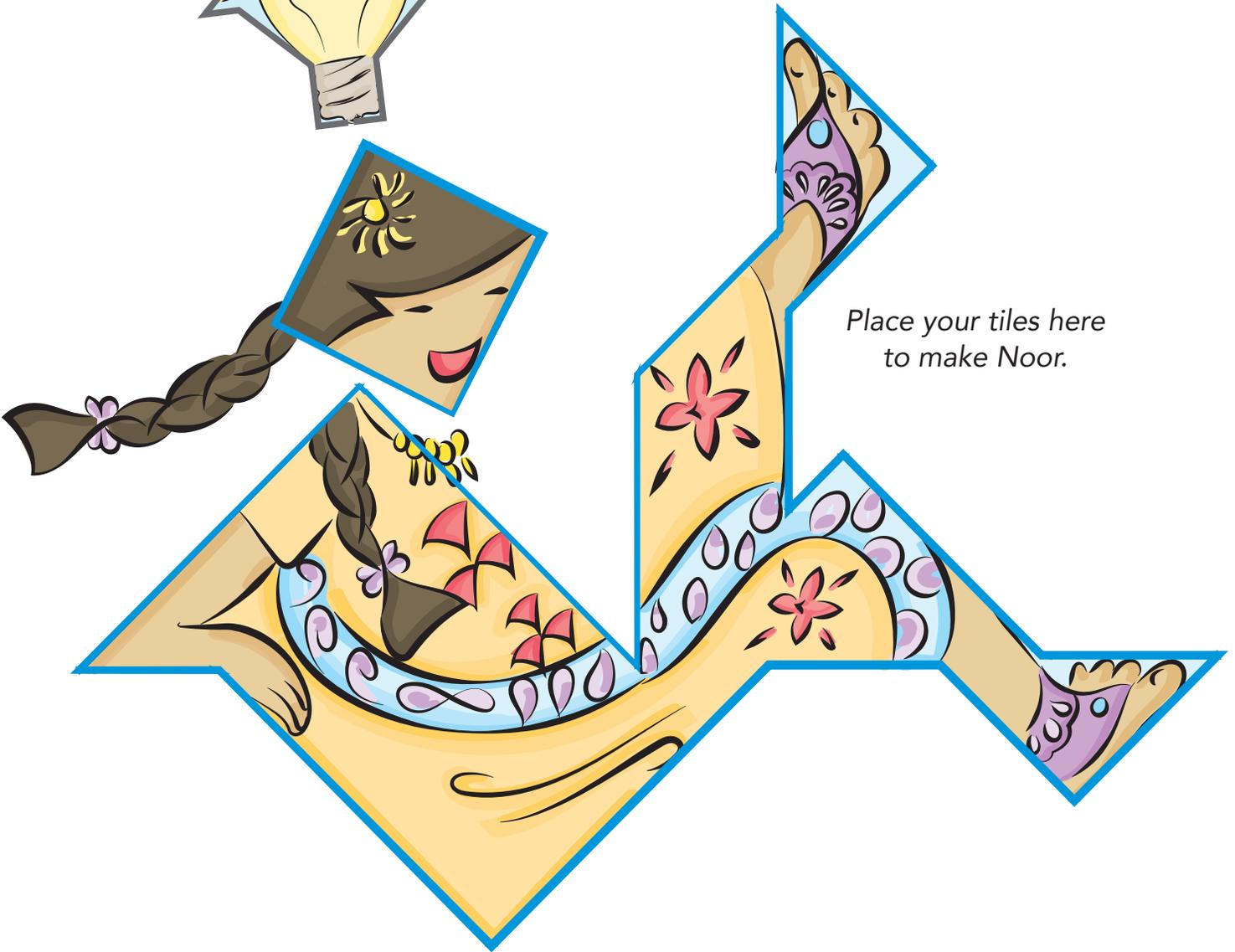
Aysha Imtiaz • Beth Hunter • Jake Hunter



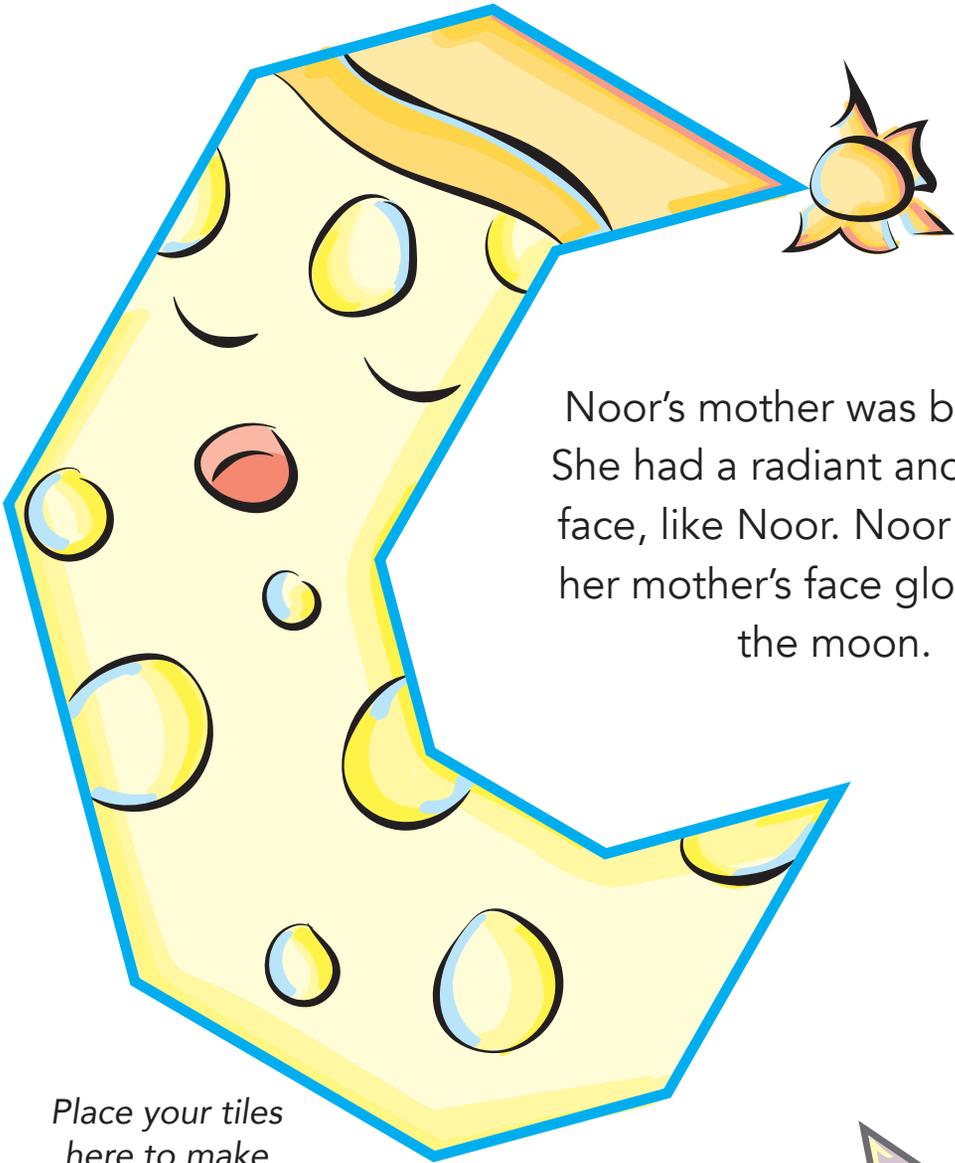
Can you make
the light bulb?



Place your tiles here
to make Noor.

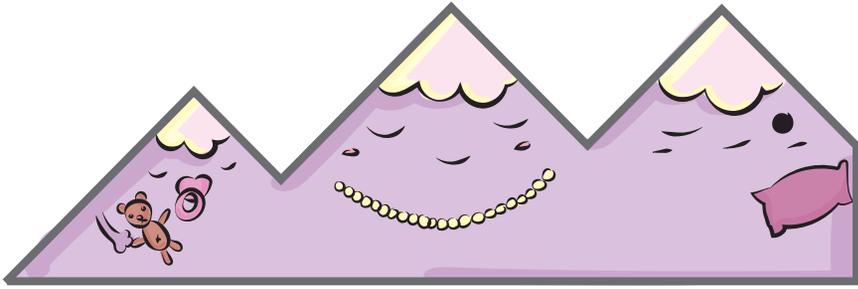


Once upon a time, in a charming little village in Kashmir, there lived a young girl named Noor. Noor's name means 'light' and she took that light to mean the light of equality, the light of fairness—and the light that lights up in a light bulb when you have an awesome idea.



Noor's mother was beautiful. She had a radiant and smooth face, like Noor. Noor thought her mother's face glowed like the moon.

Place your tiles here to make the moon.



Can you make a house?
How about the mountains?



Sadly, Noor's life wasn't that bright lately. Times were hard in Kashmir. Her father couldn't find work. Noor's mother was a seamstress. She stitched clothes for a living, but she was growing more and more tired every day. She was still beautiful, but she was losing her sparkle. They rarely had milk, cheese or yogurt to eat, and even when they did, Noor's mother gave everything to the children.

Soon, things became even worse. In the middle of winter, the family ran out of food! They ate their last meal sadly. Noor, her little brother Rayyan and her parents all shared two potatoes and a cup of bean water left over from their thin bean stew. They didn't even peel the potatoes because they didn't want to waste even the slightest bit of food.

Can you make a potato? The Cat? Papa?



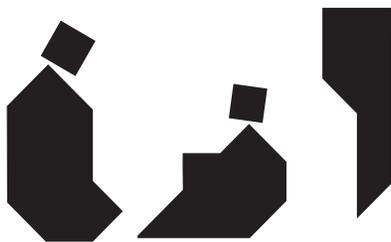
Place your tiles here
to make the shape
of Noor's mother.



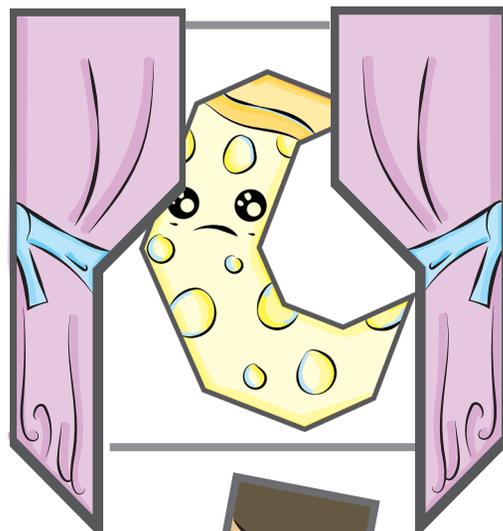
The next day Noor was hungry. At supper time, with slumped shoulders and a forehead wrinkled with concern, Noor's mother came into her room.

"Beti (daughter)" she said softly, "I am so sorry my dear. I have no supper for you tonight."

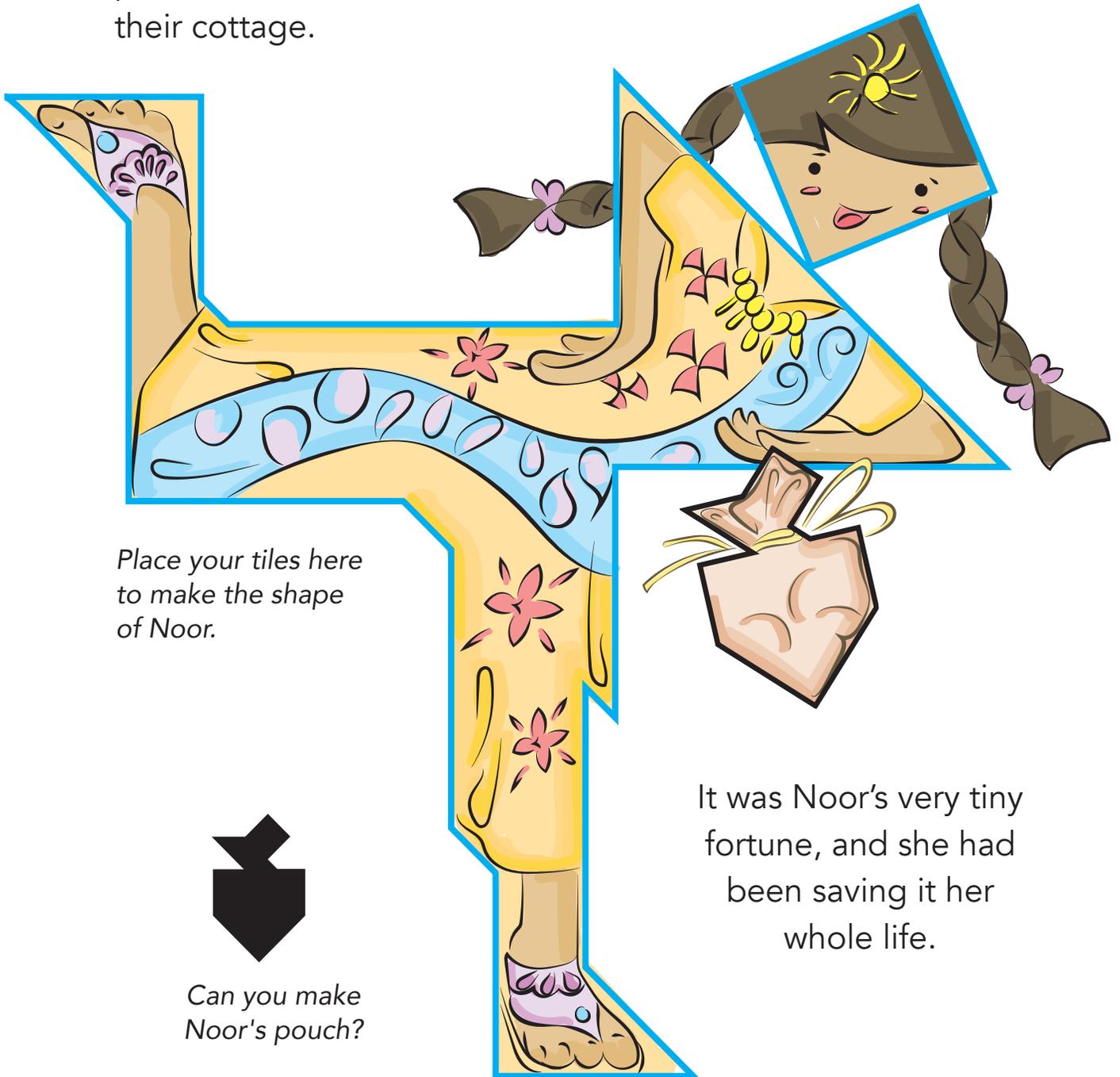
She did not have anything else to say, so she just held Noor in her lap. Noor snuggled her mama and began to think.



*Can you make Noor,
Ma, and the curtains?*



Noor was smart, brave and kind. She had a brilliant idea! Without her mother having to ask, she knew exactly what she had to do. Noor had a little drawstring pouch filled with a small fortune. When she had been born, her aunts and uncles had given her some gold coins. Noor kept the pouch hidden under a wooden floorboard in their cottage.



Noor brought the pouch to her mother.

“Oh Noor! I would never ask you for that!”

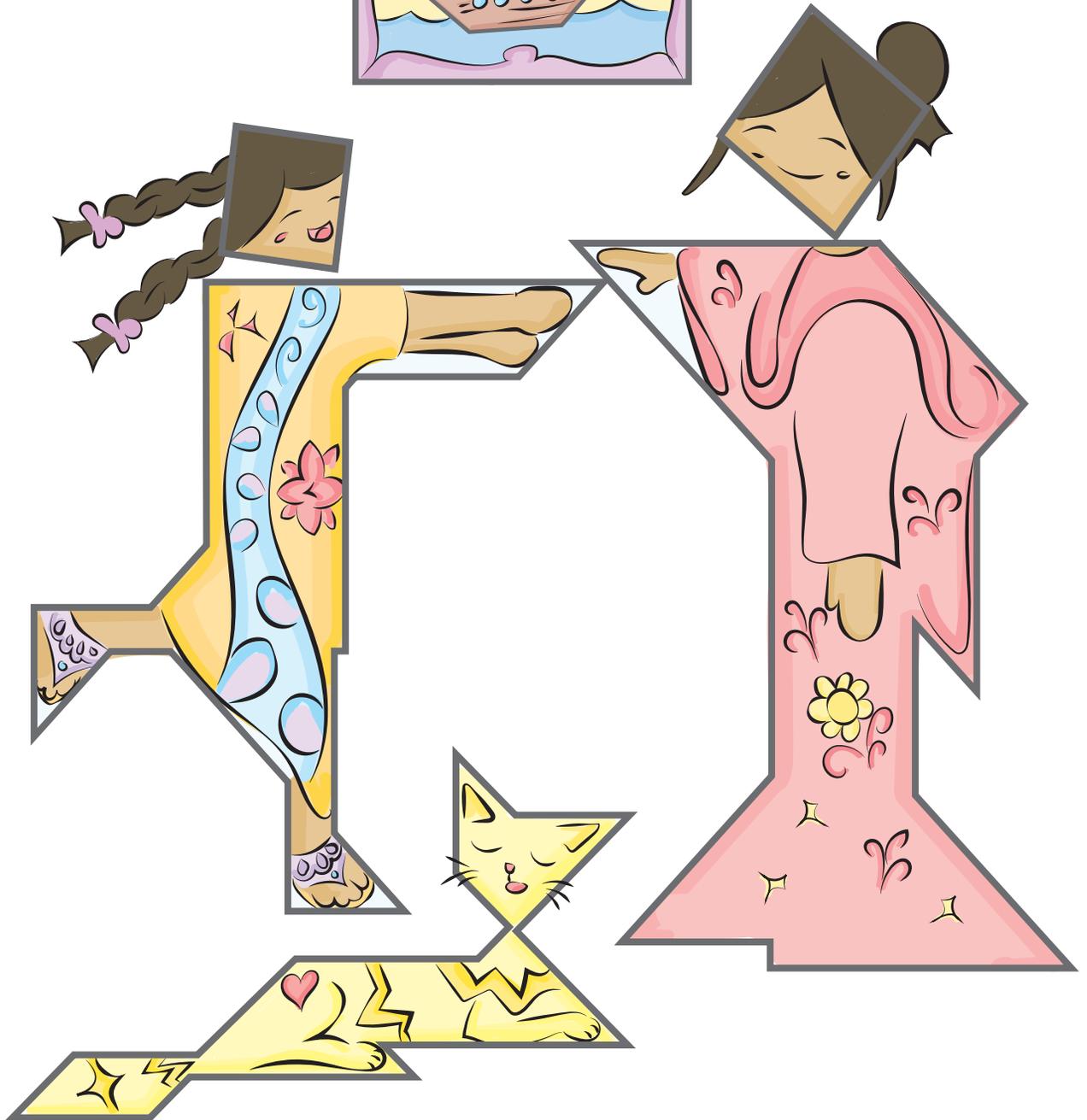
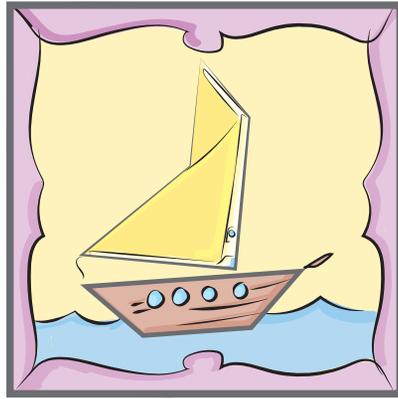
“Of course, Ma. You don't have to ask. It's what I want to do. I want to use my fortune to help our family have wonderful food to eat. ”

Noor ran over and hugged her dear mother and kissed her cheek.

“Thank you,” whispered Ma with gratefulness. They both had a reason to smile now. Noor's mother wished for her to choose all her favorite foods to buy at the marketplace. Noor was excited to do the shopping for her family.

Can you make Noor and Ma reaching for each other? Can you make her cat? A sailboat?



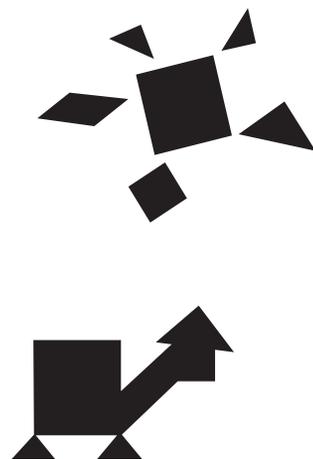


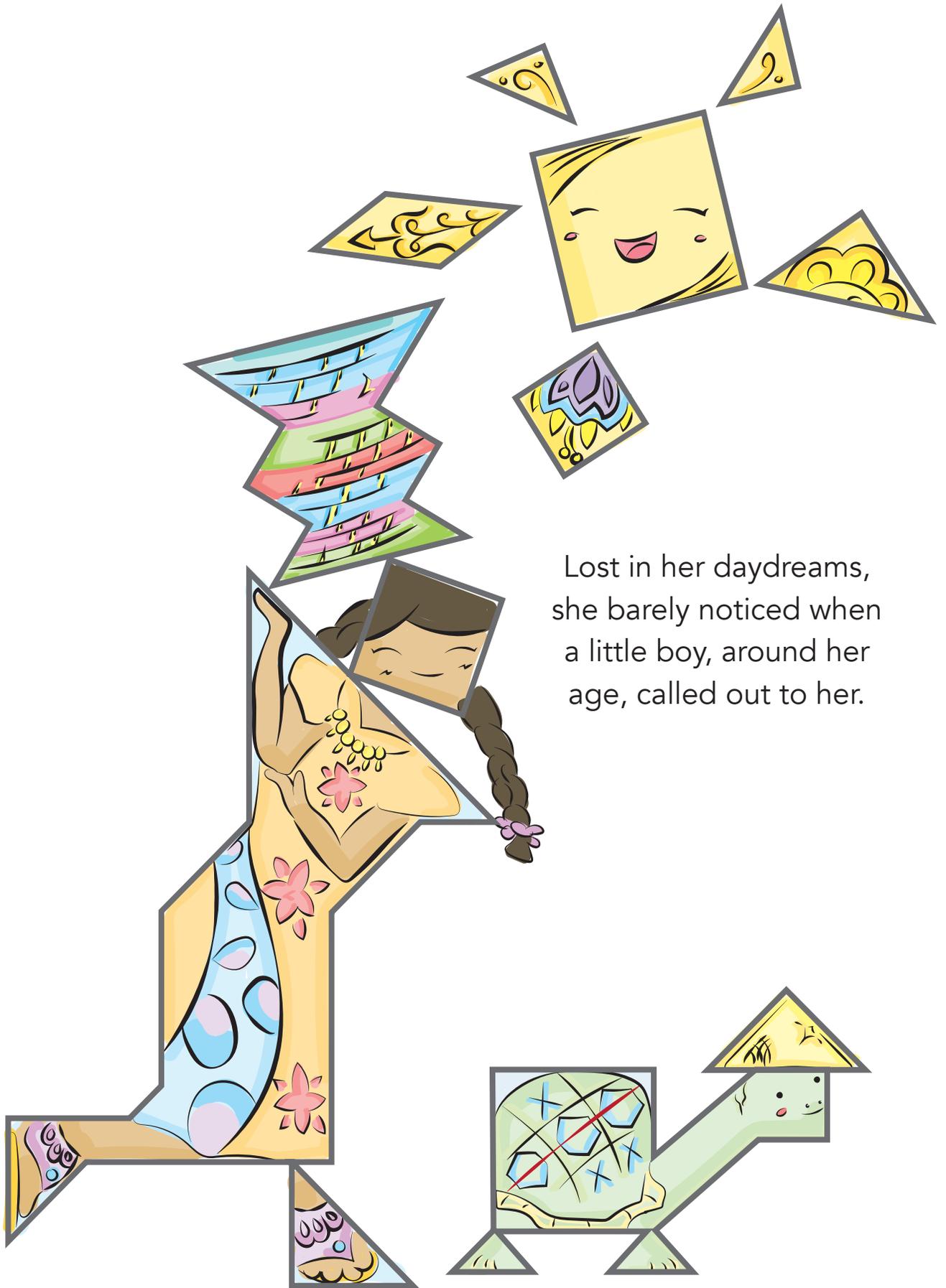
The next day, Mama gave Noor a beautiful woven basket and Noor set off for the marketplace.

As she walked, she dreamt of the pink Kashmiri tea which her father loved so much, and the dried nuts floating within it. Sunny yellow omelets appeared in her mind, loaded with cheese, herbs and onions.

How delicious it would be to have some Shahi Tukray (The King's Pieces) which was a delicious bread pudding made from bread dipped in sugar syrup and milk. It was her favorite treat! Her little brother Rayyan had just been a baby the last time they had eaten it.

*Can you solve
these puzzles?*





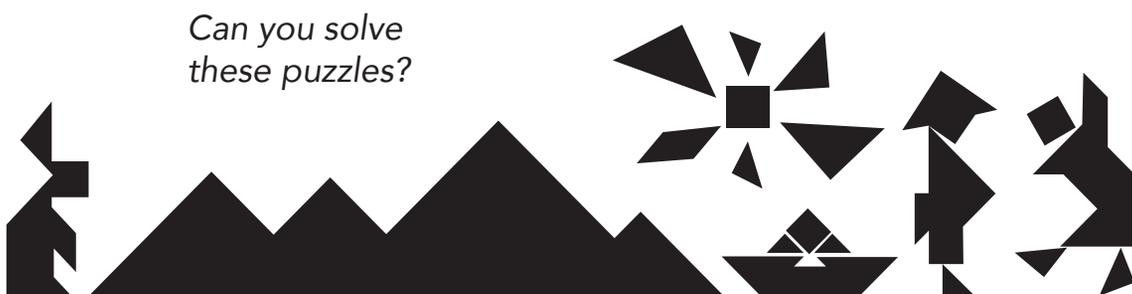
Lost in her daydreams,
she barely noticed when
a little boy, around her
age, called out to her.

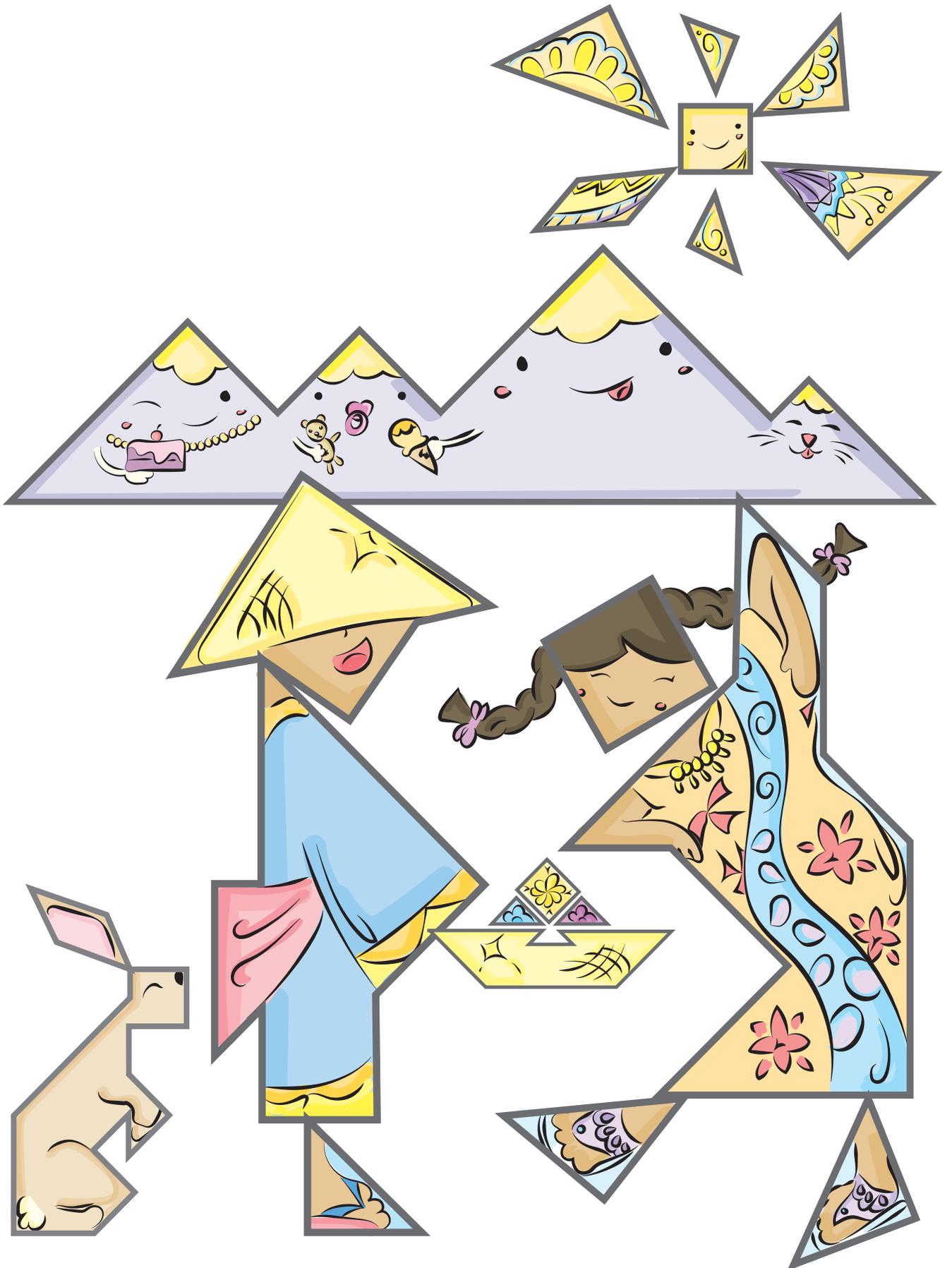
“Behna (Sister)!” he said. In Kashmir, everybody called each other brother and sister because they cared about their village companions very much.

“Come closer,” he said, “I have something to show you.”

Noor could see what looked like a faint glow coming from between his fingers. When she bent in closer to get a better look, she saw that he held some softly glowing tiles with beautiful mosaic patterns on them. The patterns reminded her of the stories of queens and princesses that her mother used to tell her.

They were amazing! She cautiously stretched out her hand to touch them, and it was almost as if they sprang into her palm! Noor was sure they would somehow come to life in her hand.





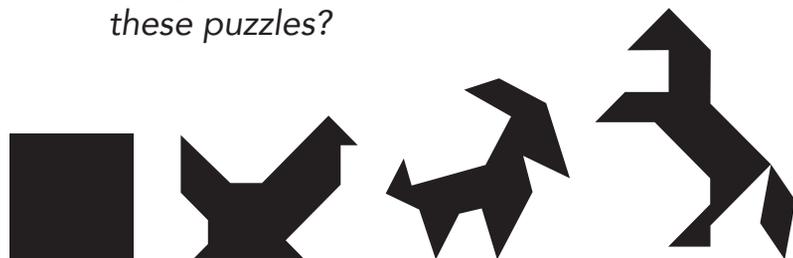
"What are these?" she breathed, in wonder.

The little boy explained that these were magic tiles. Whatever she made with them would come to life! Noor could barely believe it.

"But you must choose carefully what you build, for there are only enough tiles to make three mosaics. Once they come to life, you can't change them," warned the boy.

Noor was captivated. She had come to the marketplace to buy food, but she found magic tiles instead! Just think of what she could do for her family with the magic tiles! She handed over her entire small fortune and got all three of the drawstring bags in return. Each had seven small tiles in it, which was enough to create one small mosaic with each bag.

*Can you solve
these puzzles?*





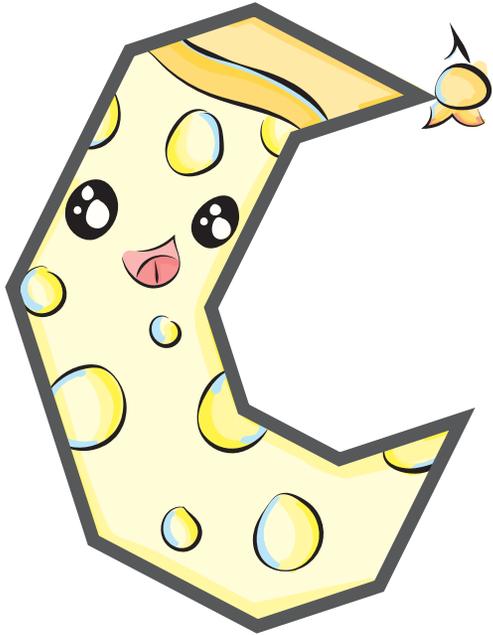
When she arrived home, Rayyan ran to the door to greet her. He was followed by Ma and Pa. They all expected Noor to have food, but they only saw three drawstring bags. When Noor opened the drawstring bags, it was not gold coins, but tiles which tumbled out. Noor's parents were very disappointed in her.

"You lost your small fortune," her mother said sadly, while trying not to look too disappointed (even though she was).

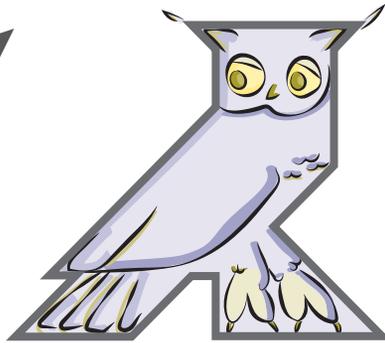
Noor could tell from the way they were hunched over that they were hungry. Noor felt very ashamed of herself, and wished she had gotten food after all. 'The little boy must have tricked me,' she thought.

*Can you solve
these puzzles?*

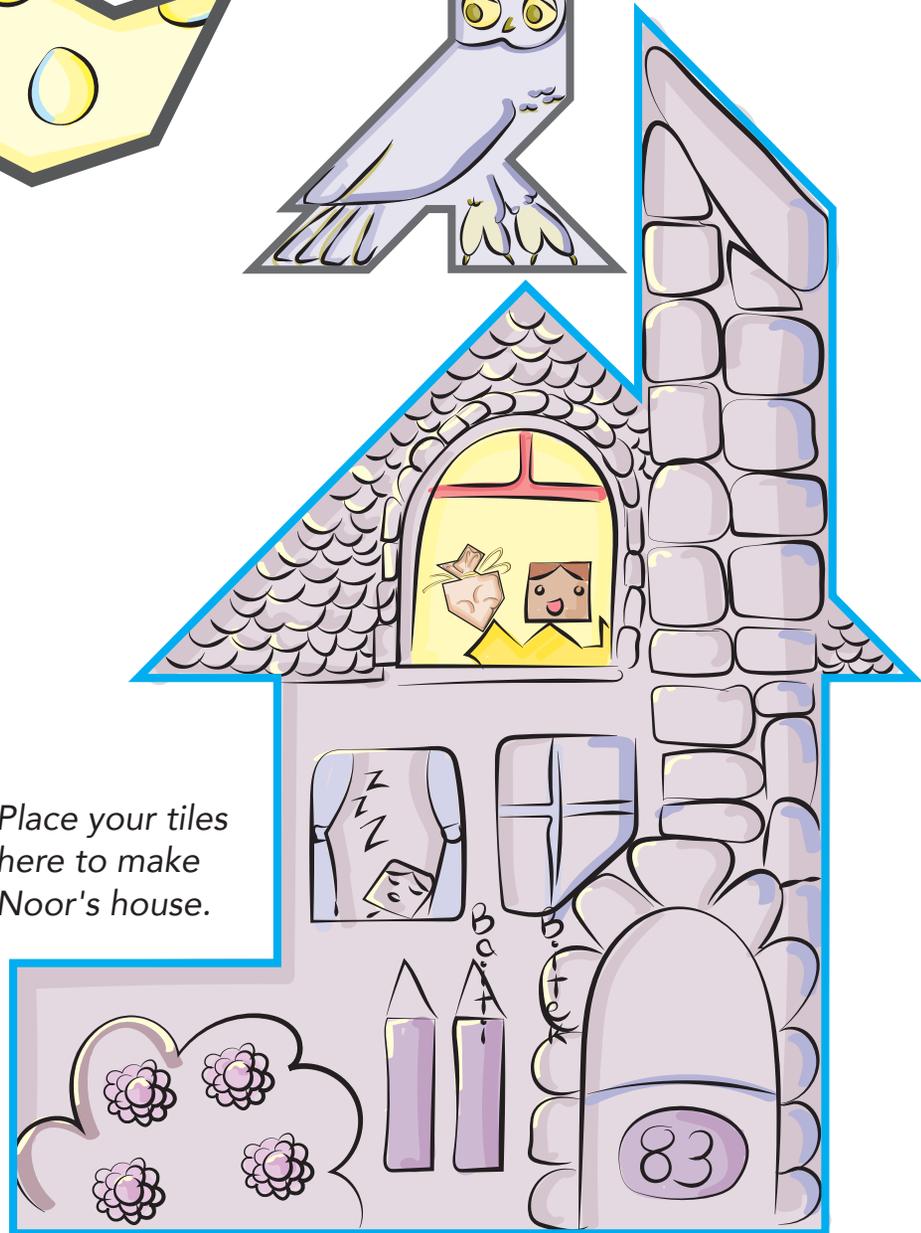




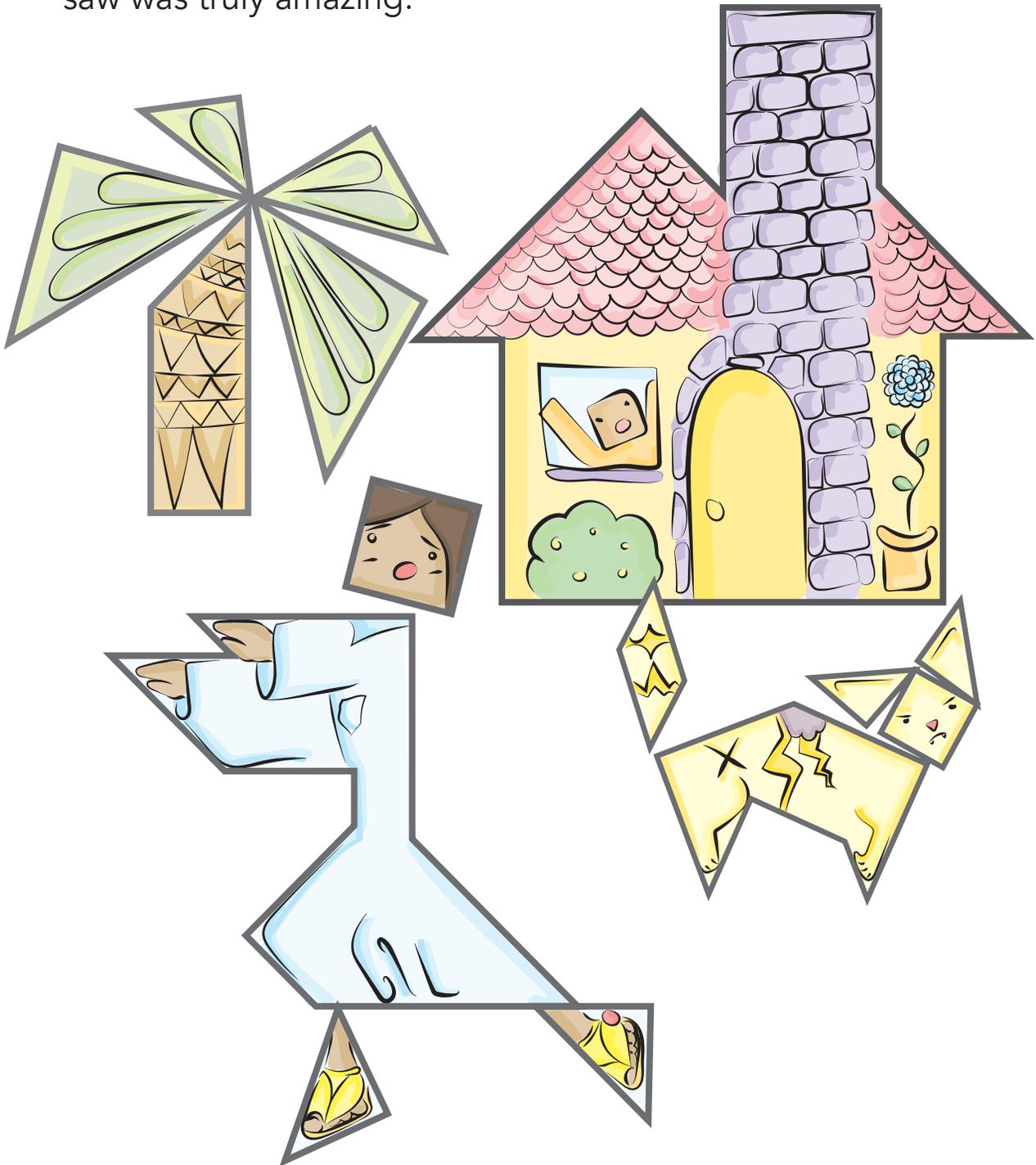
Before Noor went to bed,
she set the useless bags of
tiles in Rayyan's room for
him to play with.



Place your tiles
here to make
Noor's house.

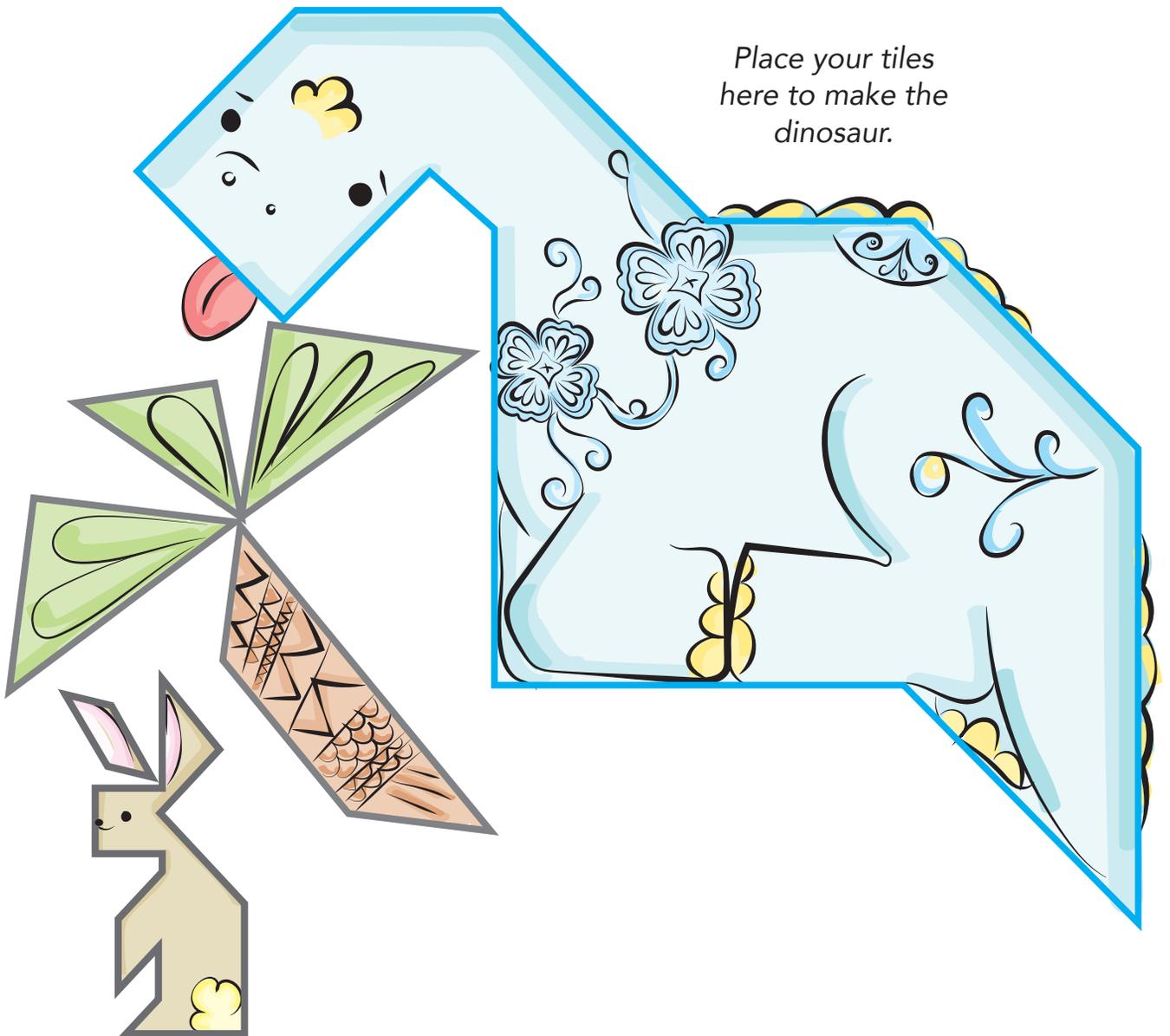


The next morning, Noor woke to the sound of Rayyan screaming. He rushed into her room. "Sister!" he was breathless. "There's something outside my room—I could hear it ROAR." At first, Noor thought it must have been Rayyan's tummy, but when she looked outside, what she saw was truly amazing.

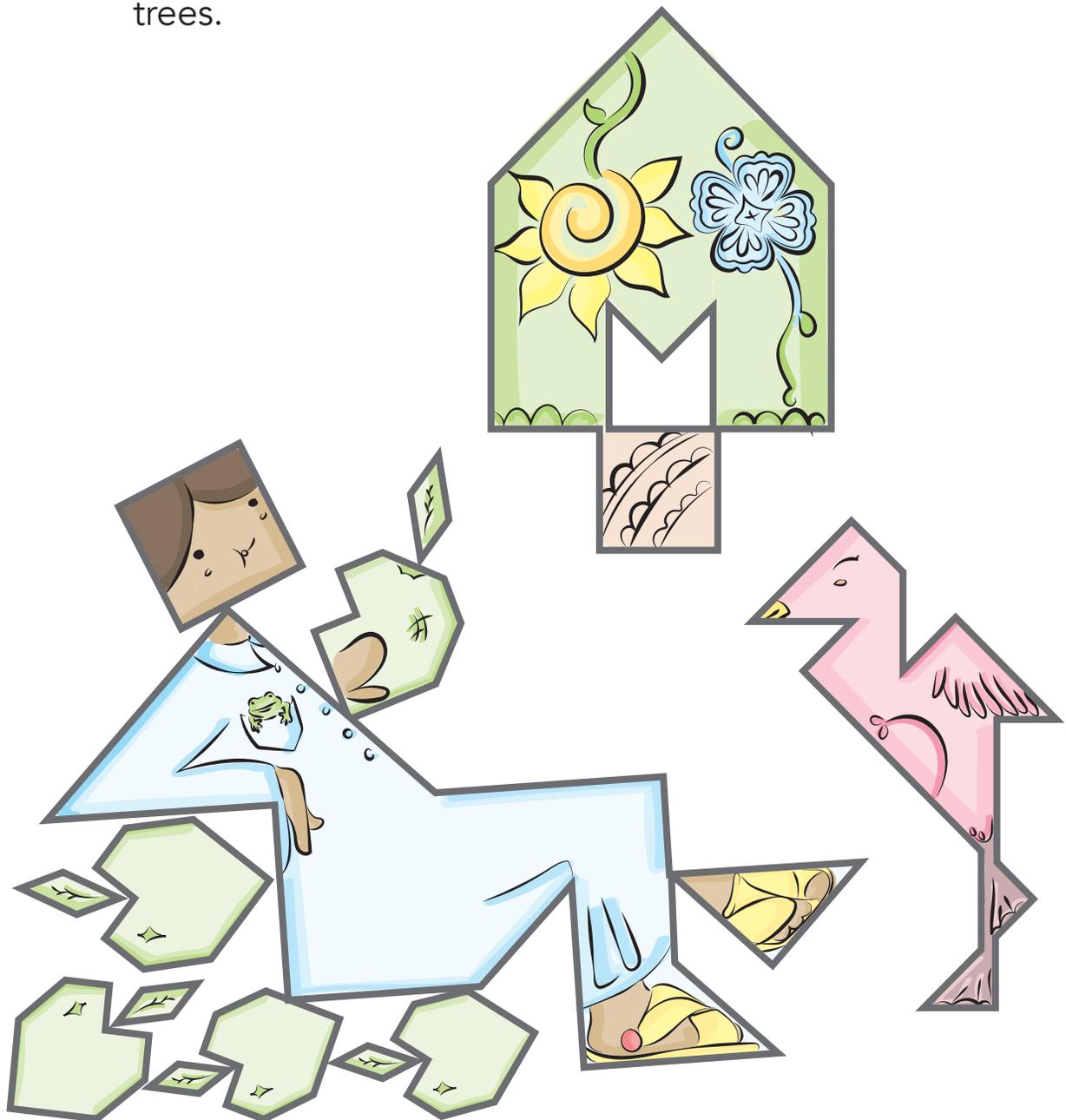


There, right before her, was a brilliantly patterned, living, breathing ... dinosaur! It was majestic and beautiful, and each inch of her was covered with beautiful mosaic patterns. Along her body, there were lines, almost as if puzzle pieces had been joined together and life had been blown into them. Astounded, Noor understood what had happened.

Place your tiles here to make the dinosaur.



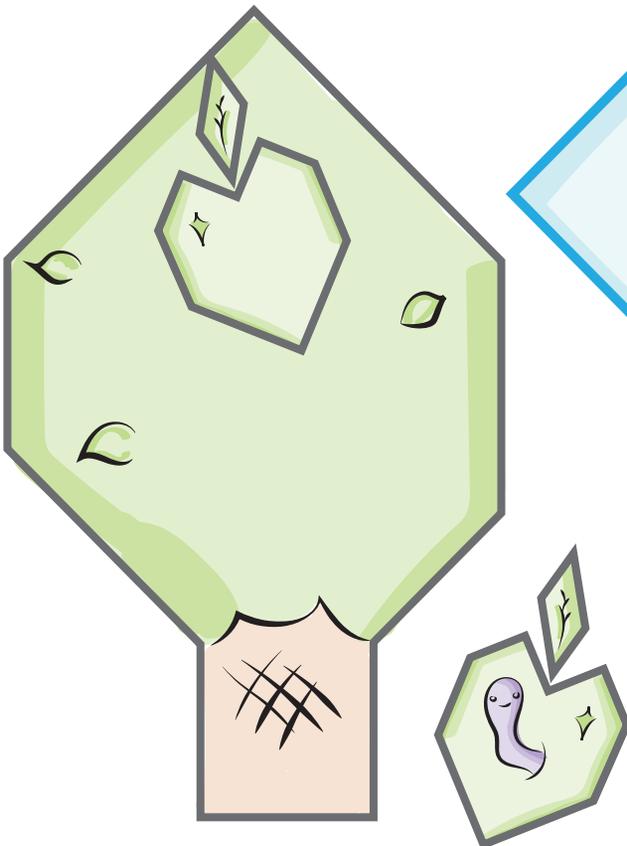
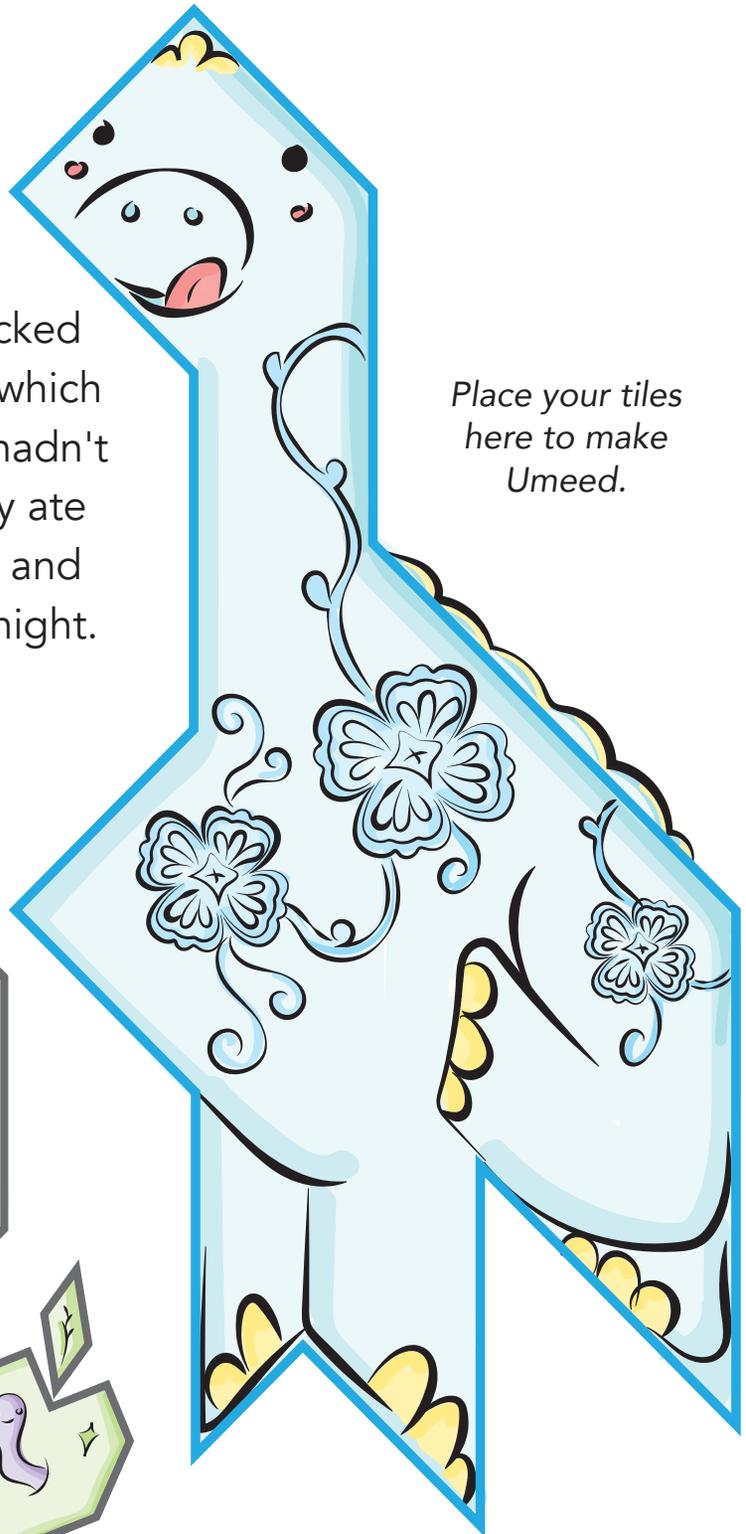
Rayyan and Noor played with their dinosaur all day. The dinosaur was gentle and cool to the touch, like a stone building. She was covered with beautiful designs like flowers, each of which fit perfectly into one another. They named her 'Umeed,' which means hope. Umeed stretched her neck to eat the leaves from the tops of pear trees.



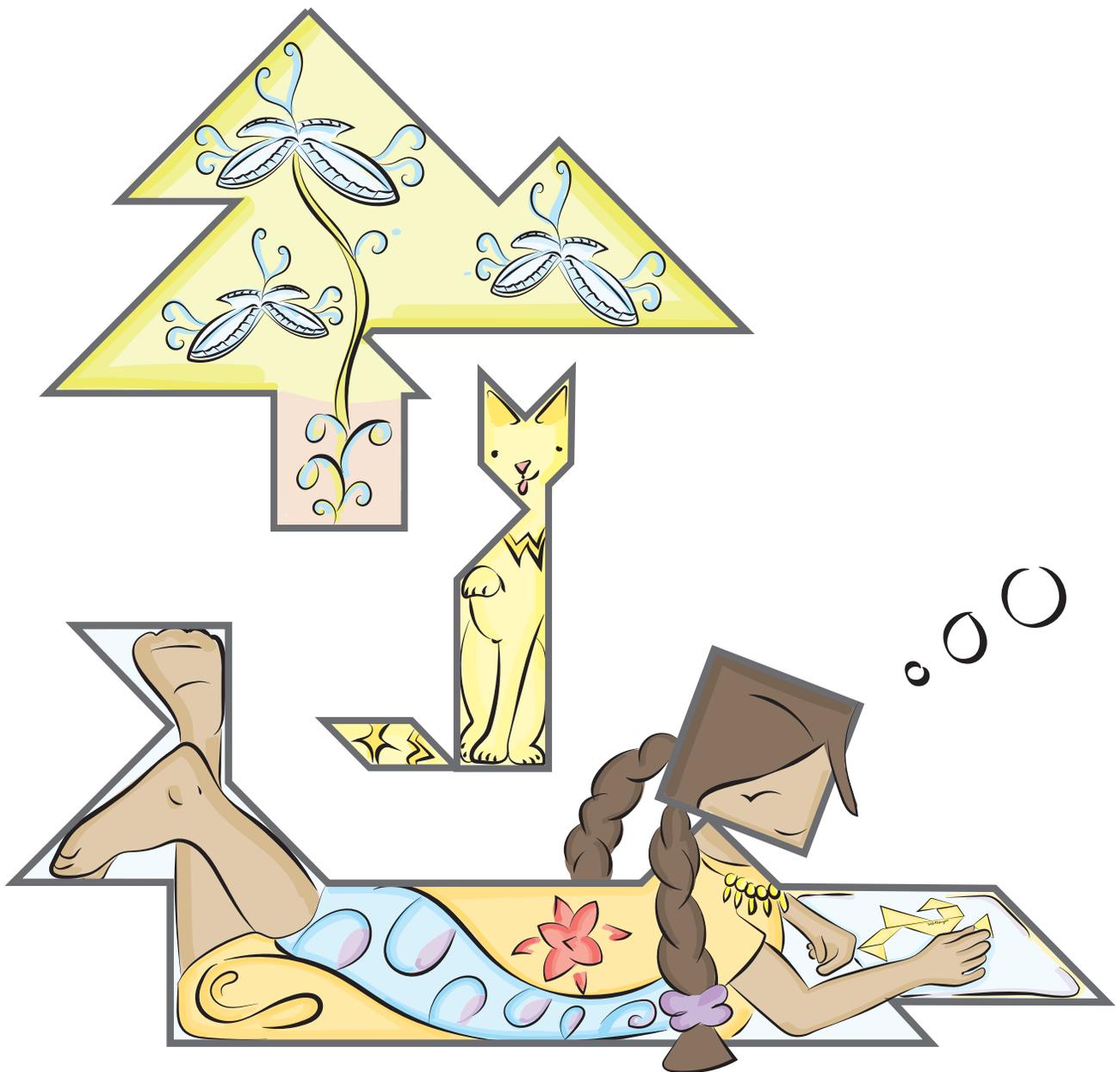


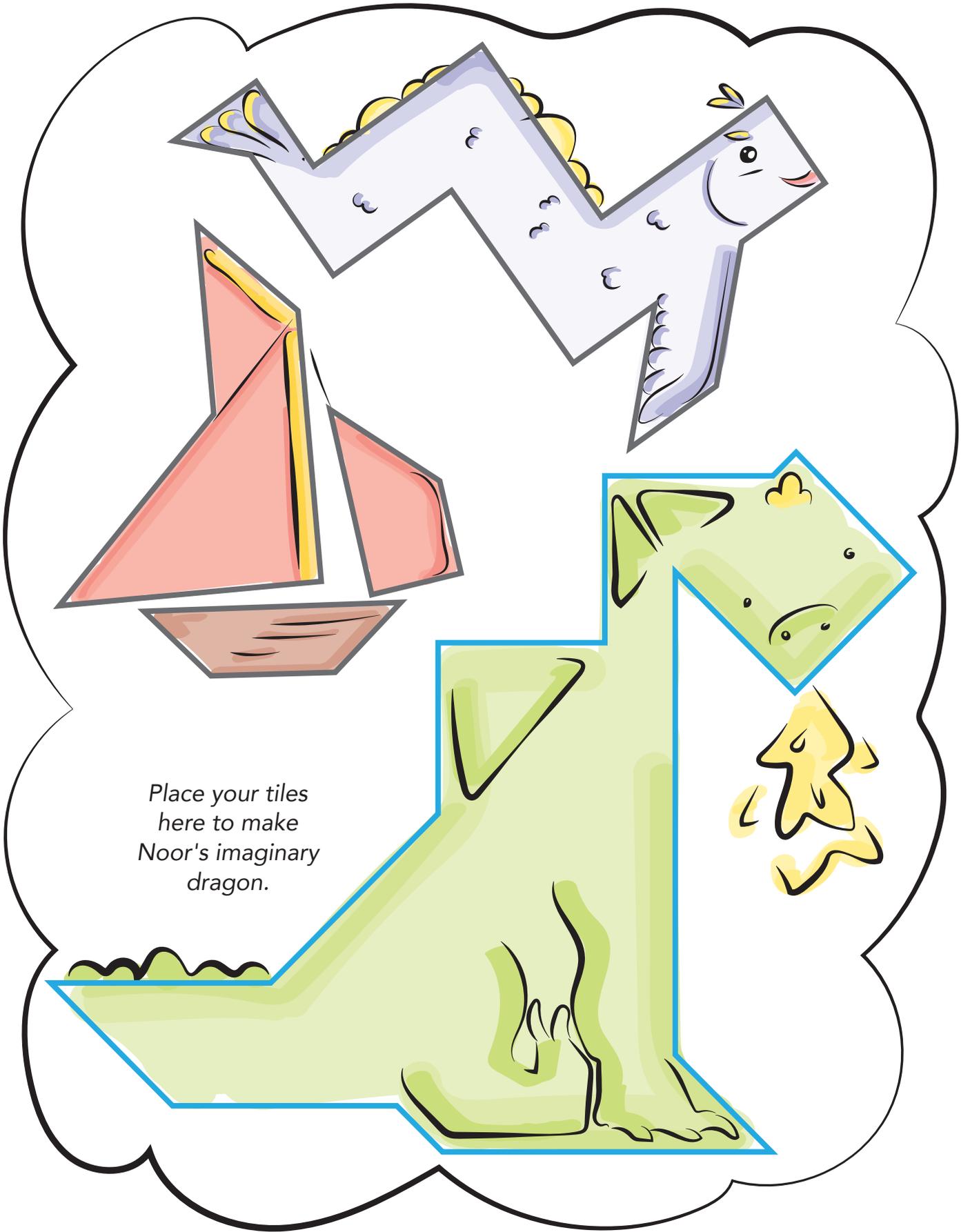
As she ate, she knocked pears to the ground which Noor and her family hadn't noticed before. They ate the pears for dinner and weren't hungry that night.

Place your tiles here to make Umeed.



Noor knew what she had to do now. She would create something to make her family brilliantly happy for a long time. She thought and she thought, and then, it came to her like a light that switches on when you have an awesome idea! Finally, Noor knew what she would make!





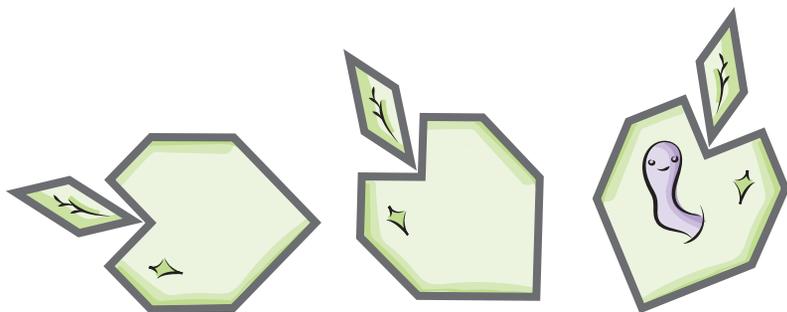
Place your tiles
here to make
Noor's imaginary
dragon.

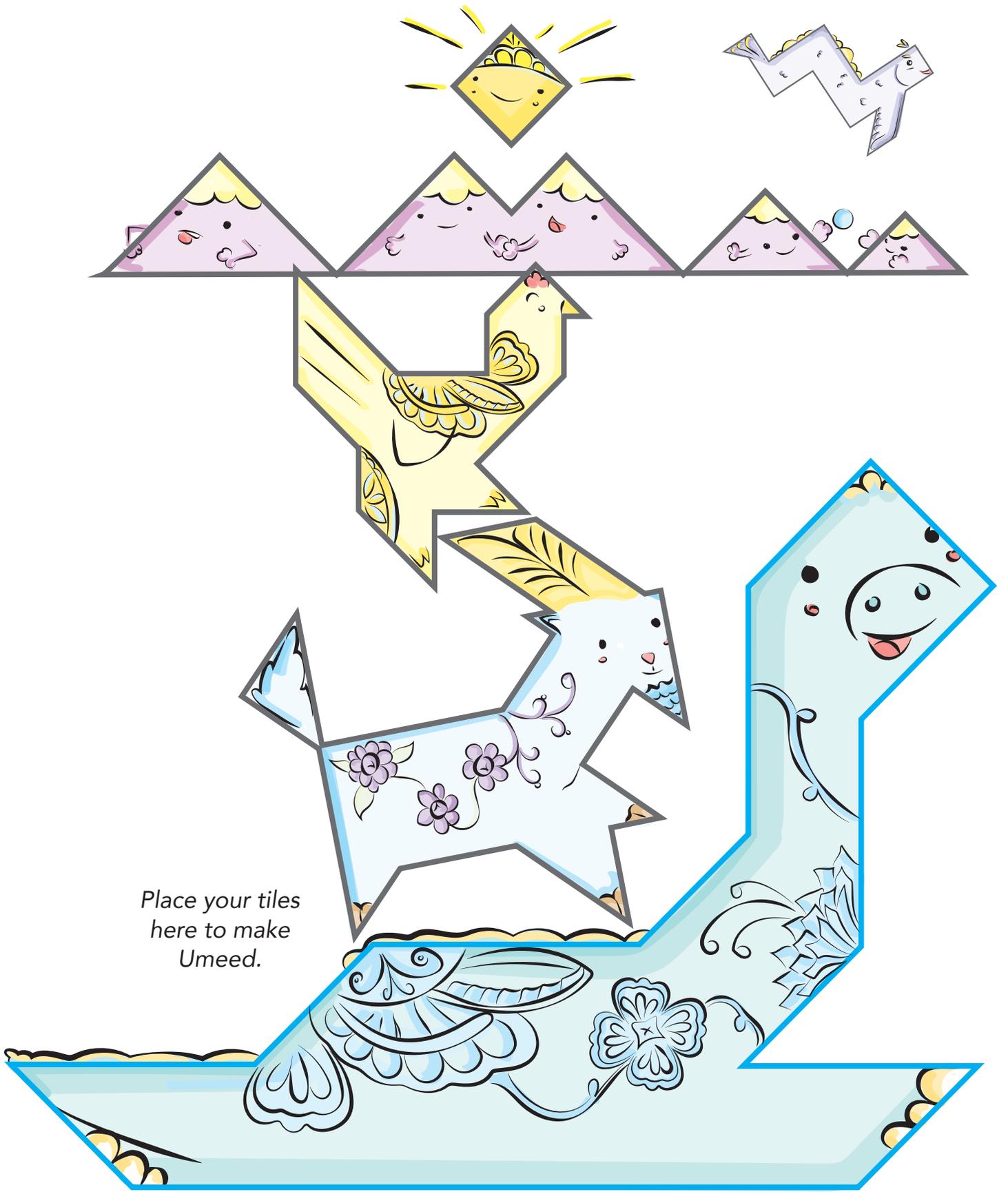
Nine months later ...

Ma's face is shining like the moon again. There are no grumbly, hungry tummy sounds in Noor's home now. Instead, Noor hears the happy cluck-cluck of her magic chicken, Coco, and the bleating of her magic milk goat, Pogo.

Umeed helps all the farmers in the village. He picks fruit for them from the tippy-tops of trees. Noor and Rayyan charge them a small fee, and they use the money they earn to buy other things.

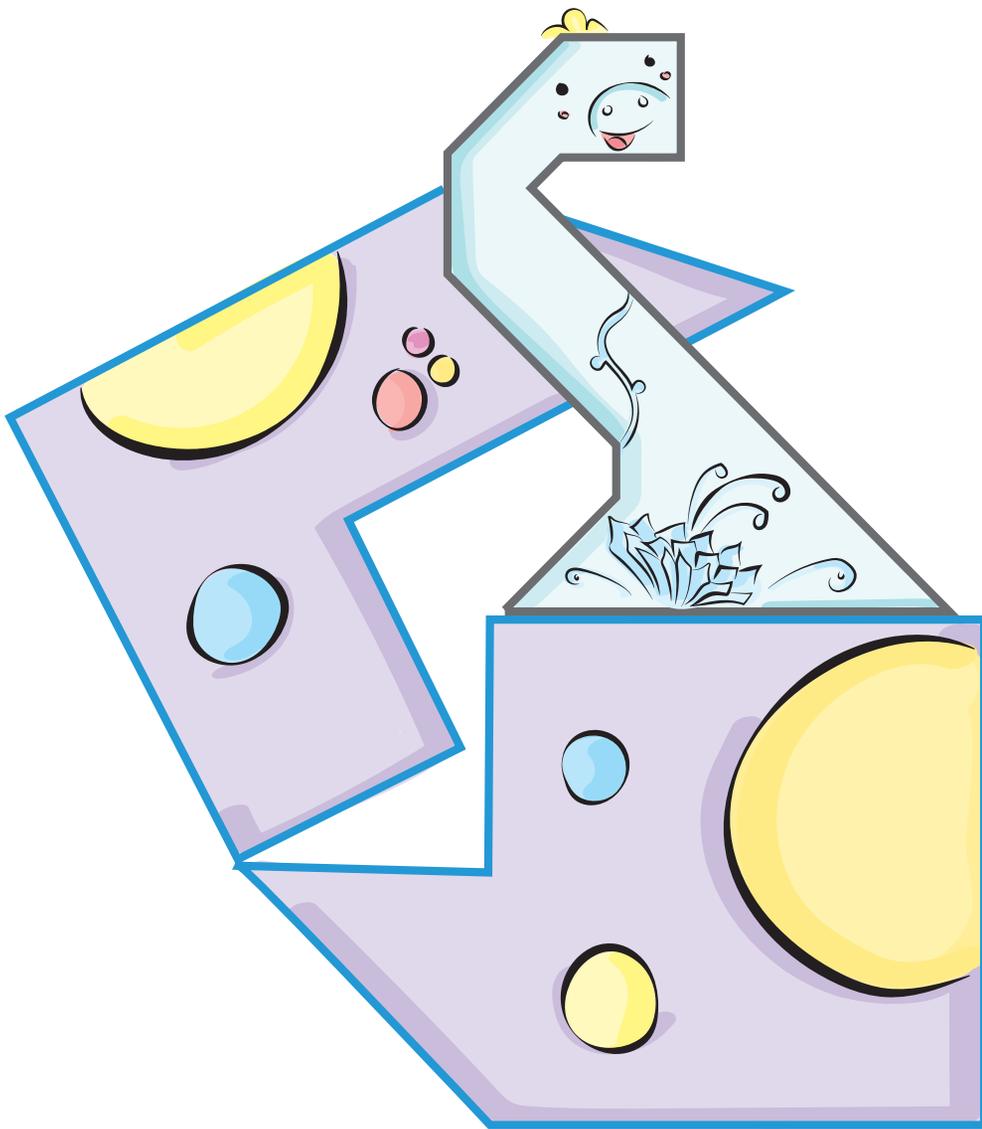
Noor's family now has all the milk and eggs they could ever want, and Pa loves drinking his favorite pink Kashmiri tea. Ma makes many omelets using Coco's eggs, followed by a nice, tall glass of milk from Pogo. Noor makes Shahi Tukray as often as she likes. And Umeed? Well, most of all, she loves her joint owners, Noor and Rayyan, and ...

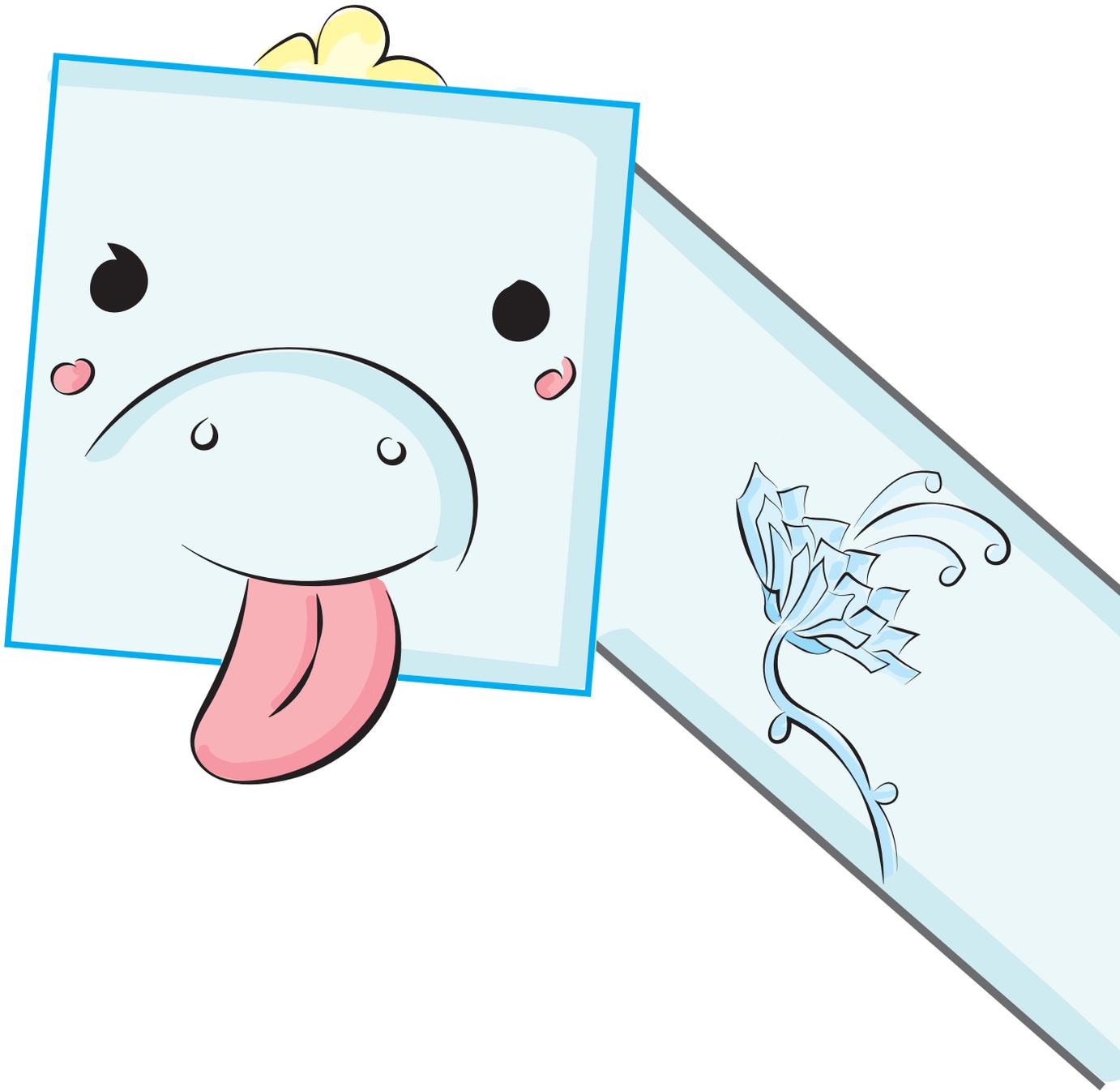




Place your tiles
here to make
Umeed.

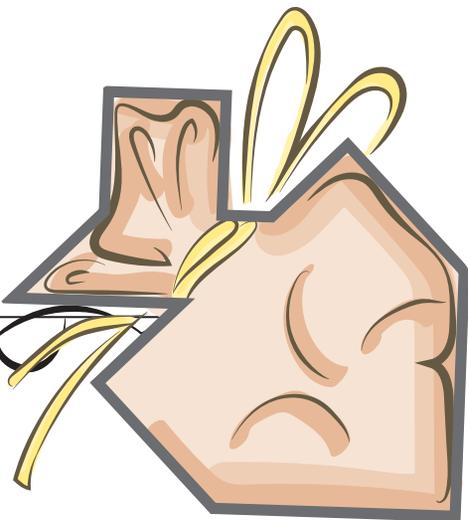
... lately, she has been carefully tending
to her gigantic purple egg!





What would you make if you had three sets of magic tiles?

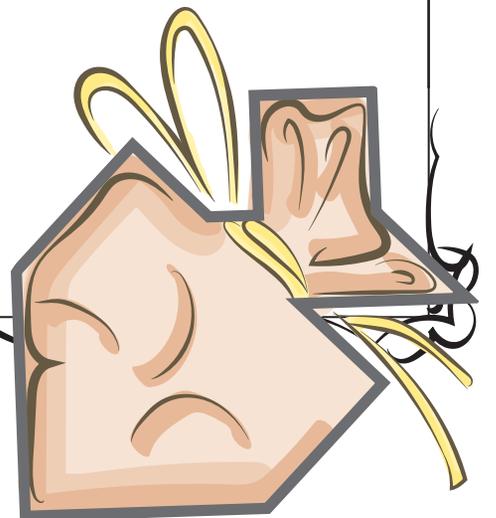
What is it? _____



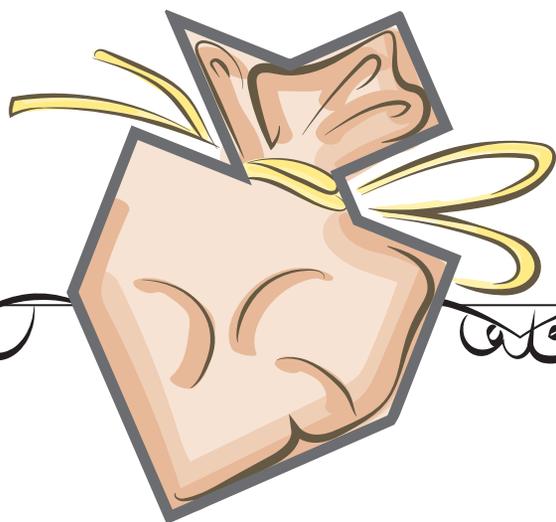
My first amazing tangram
tile creation.

What is it? _____

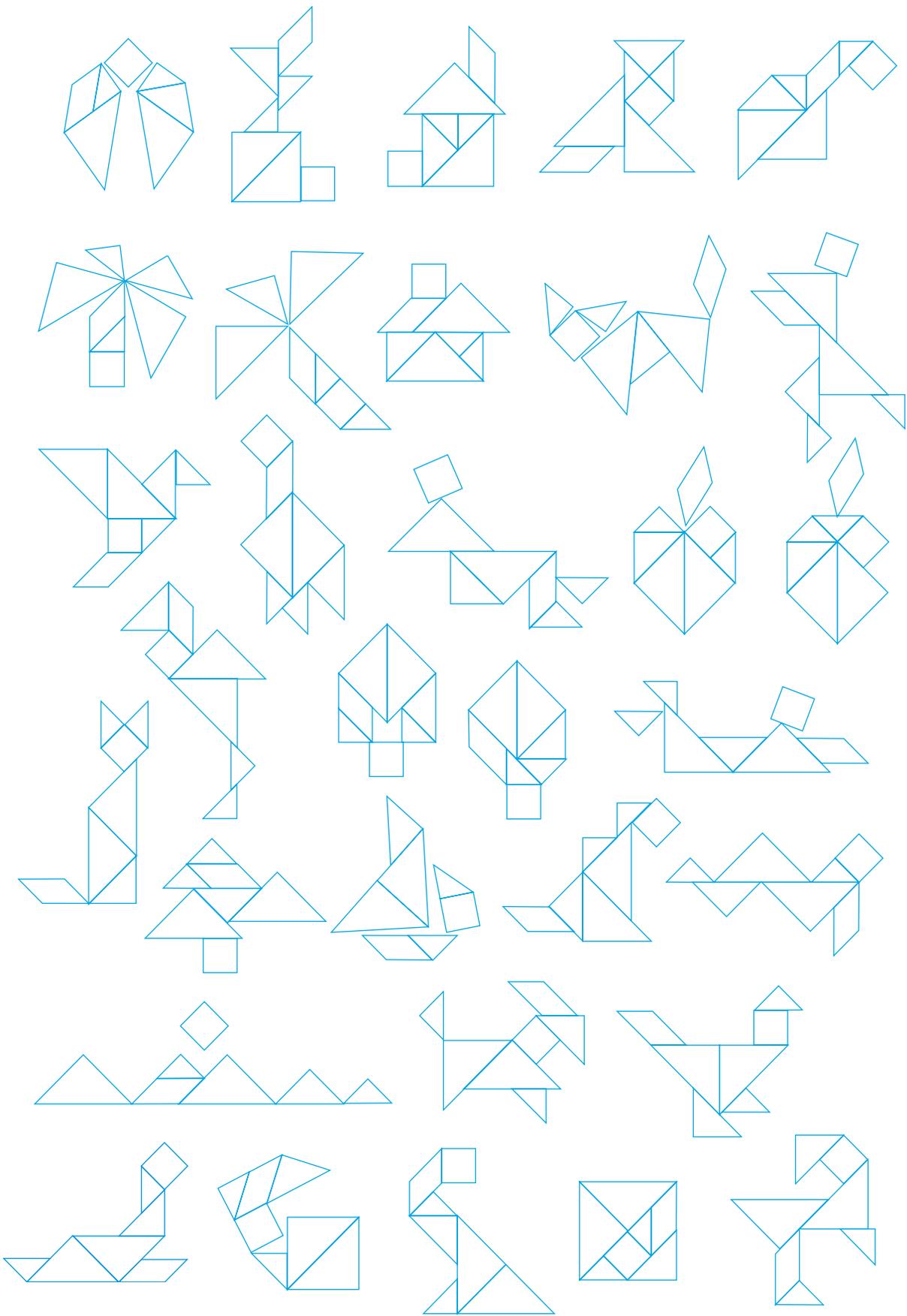
My second amazing
tangram tile creation.



What is it? _____



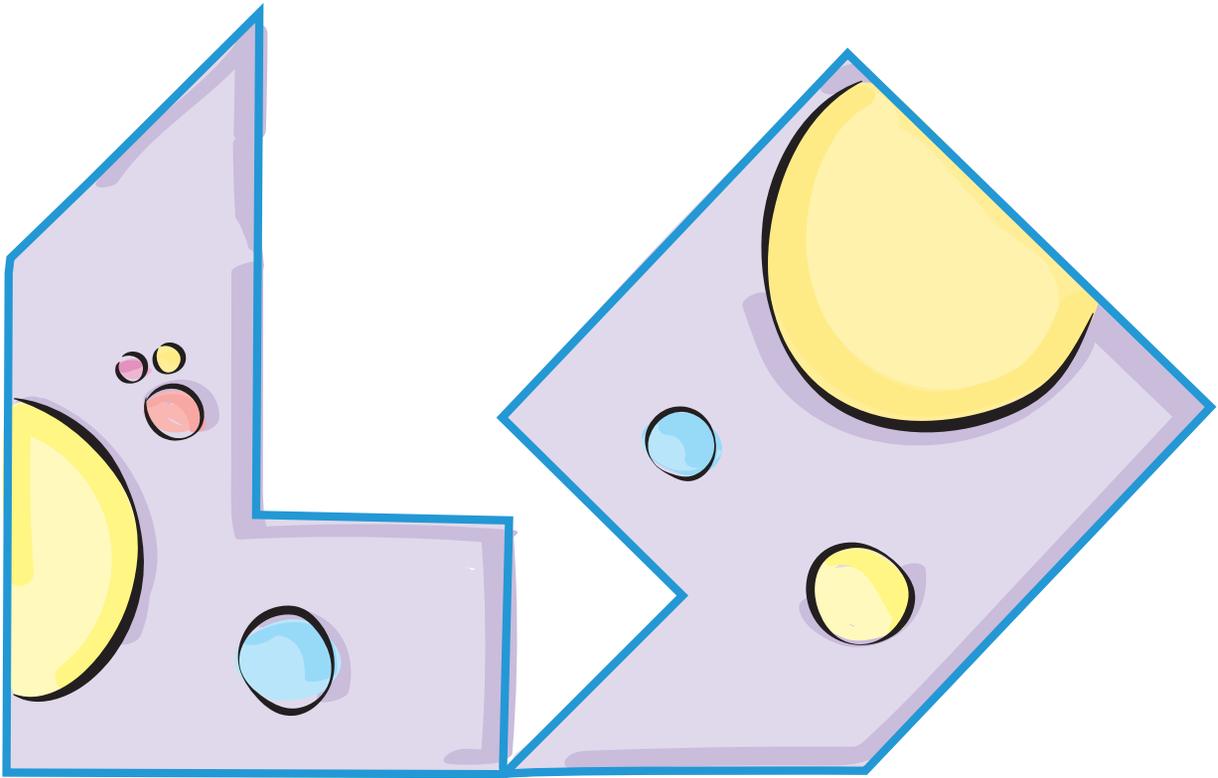
My third amazing
tangram tile creation.



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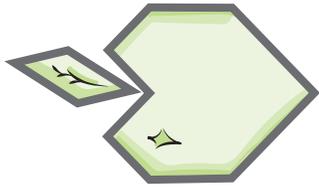
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Put your
tangrams in
here. 

Use glue stick here.

Cut, glue and fold to make a holder
for your tiles.

Use glue stick here.

Fold on line.

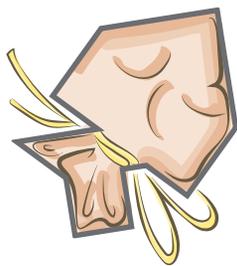


Cut on
dotted line.



Parents,

Make some family time to solve these STEM (Science, Technology, Engineering and Math) puzzles with your child. Solving tangram puzzles is good for their developing mind and helps them think abstractly! You can keep your tiles in this envelope. Enjoy!



What will you make?

MOOR'S MAGIC
TILES

For every book sold,
a book will be donated
to a child in need!



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