CHAPTER 5: The City of Strange Parts

The goal here is to make children familiar with the term of subsystem (a part of an object) and teach them to find parts inside of the whole.

«Two legs on three legs, with the third in its teeth...» with this well-known riddle we enter the City of Mystical Parts, where every object is turned into a riddle when only a part of it is shown. Some of the objects like to disassemble, and to show their separate parts in the windows of their houses. Others simply thrust out their noses, or tails, or some other strange curves (hard to understand whether it's a wheel or a kitchen tap), and the shiest ones hide in their basements, only leaving a trace - go try to guess by that trace what they are!

Here it would be the best if the teacher composed the exercises on his or her own. At least I think that the following exercises are not everything that can be given on that topic.

The Street of Unfinished Drawings

Ex. 5.1

«Once upon a time a lazy painter walked the streets of the city. He saw empty houses built for the riddles that weren't composed yet and thought: «Why don't I draw a riddle and put it into one of the houses?» He started to draw, but soon got tired of that, left the riddle half-done

and walked on. Reached another house and started again. And again. And because of that lazy painter there is a whole street with houses full of unfinished drawings. See – there are these unfinished riddles on the album sheets. Why don't you try to help the painter and finish his riddles?»

Comment 1

This exercise is interesting to observe when every student is given the same fragment of a drawing. Some turn it into a donkey's tail, some - into a reed-pipe, some - into a flower's petal.

Ex. 5.2

I have a cardboard house with a hole for the window. From the hole its inhabitants – riddles – are looking out. I try to show an object through the window in such a way so it is difficult to understand what it is – show only half a handle of the scissors, a familiar toy I turn upside down and stick out through the window its feet. The task is for the students to guess what it is that is hiding in the house.

The next step is for the students to show their own objects and drawings through the windows of the houses.

The Street of Disassembled Objects

Ex. 5.3

We make a riddle out of an object by naming its parts and the number of them. For example: 4 wheels, 1 engine, 1 driving wheel, 1 driver's cabin, 1 trunk - we get a car (don't confuse with a motorcycle, which doesn't have a cabin). Such riddles are living on the Street of Disassembled Objects. The table for composing riddles looks as follows:

Number of parts	Names of parts

Comment 2

Despite its simplicity, this scheme is very useful, since it allows comparing, for example, parts of similar objects (such as vehicles, food, furniture, etc.)

Ex. 5.4

«How can you compose a riddle about a chair by naming its parts? (Four legs, one seat, one back)».

«Good, but this riddle is too simple. Imagine, if I took one of the legs off the chair and showed it to you separately, how would you call it? (A stick)».

«Very good! Can you compose another riddle about the chair, then? (Four sticks, two boards...)».

The table in this case is the same as before, but the teacher should point out that the parts should not be named directly. Speaking in other words, the students have to abstract from a given object.

Comment 3

Objects that can be used for the Street of Disassembled Objects: abacus (ten rods with ten beads on each), curtains, a light-bulb, a comb, a fork.

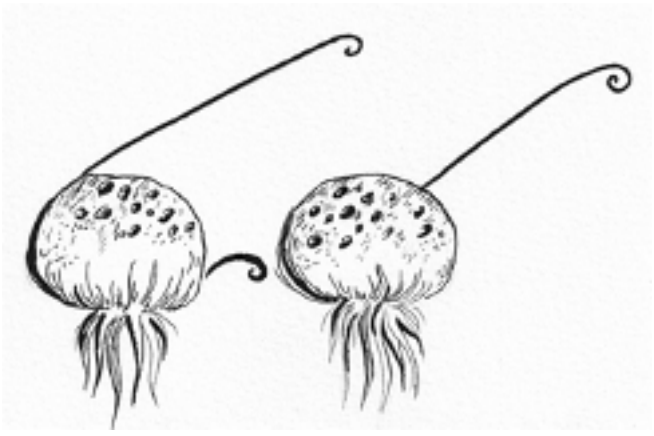
The Street of Similar Parts

Riddles in here are special because they tell you what every part is similar to.

Ex. 5.5

Let's compose riddles on the following basis:

Names of Parts	How many?	What are they similar to?
The hooked part of rim	2	Fishing hooks
Round pieces of glass	2	Jelly-fishes
Rim	1	Letter "B"



Example: The class creates a riddle about glasses. The first column is take out – erased, for example, and we get our riddle: «Two jelly-fishes on two fishing hooks and one letter «B»». (Glasses)

Comment 4

It is important that the first column, which explains the riddle, called "Names of Parts" is erased. Children often don't like it that in the way it is written down one can clearly see the riddle. If it is not warned off, they might simply refuse using the table.

Other usable riddles can be composed on this subject. Readers could do it on their own, using the material of chapter 10.

The Street of Silent Riddles

Ex. 5.6

«How is it possible to draw a cat without actually drawing it?»

One could draw a tail sticking out from behind a fence, or a paw, or whiskers. Or maybe a trace left by that imaginary cat - a puddle of spilled milk. A cat, drawn in parts, cannot be recognized too easily. Finally - and this is for the brightest kids - a small cat is drawn as a part of a huge mouse. There is a cat - but a cat is also not there.

I think you already know why these riddles are called silent - they are asked without the help of words, just by drawing.

CHAPTER 6: City of Strange Places

Our goal is to give students an understanding of super-systems (the environment of an object; something it is a part of).

In some sense this city is an opposite of the City of Strange Parts. Objects in here have their own way of hiding - they leave us messages of where they can be found.

Ex. 6.1

On this house it says: salad, store, bag, vegetable garden. Look, this house is kind of big - probably, more than one object is living in here. Let's try and find out who they are.

Answers are given: potatoes, carrots, cucumbers, steak.

«Wait! Does a steak grow in a garden? No, that won't do».

Ex. 6.2

Let's choose a student and compose a riddle for him or her. For example, a needle. Which objects, and where, have needles? A spruce, a hedgehog, a syringe, a sewing machine, etc. Same riddles may be composed about a wheel, a hat, a bow, and many more. Such a riddle consists of only one question - what is it a part of? Or where can it be found? Or who has it? Smaller kids may be asked where does it live? For example, where does a feather live? (On a bird, in a pillow).

Ex. 6.3

Let's compose similar riddles, but instead of naming the super-system we'll use a metaphor (not a hedgehog, but a living ball), calling the objects by their characteristics (both the quick one and the green one have it), by their functions, etc. In the schemes the following questions are possible:

Where does it live?	**What is it similar to?**
In the sky	Dark cloak
In the lake	A mirror

or

Where does it live?	**What kind of house is that?**
In the sky	Airy
In the lake	Wet

Left column of the table is not included in the riddle. Using the words from the right column, we'll get the following riddle: **spread on the dark cloak, reflected in the shining mirror, or live in the airy house and can be seen in the wet one.** (stars).

Comment 1

It helps if you establish with your students how the super-system is called in general: a house, a place, or something else, or they, composing riddles, won't be able to use the table properly.

Ex. 6.4

Let's look at another interesting table - we can call it a "nested doll". The following riddle may serve as an example: *on a branch there is a high hook, on the hook we have a box, in the box five guys are sitting together* (peas in a pod). This riddle is different from the previous because it describes a progression of objects located on each other or inside of each other. Of course, none of these objects is named directly - all coded. Let's ascribe letters A, B, C and etc. to the objects in the riddle and make a table.

Where is it located?	**What does that place look like?**	**Object?**	**What does it look like?**
A	A	b	B
B	B	c	C
C	C	d	D
D	D	e	E
On the table	High floor	A lamp's riser	An iron arm
On the riser	In the iron arm	A lampshade	A lampshade
In the lampshade	In the thin cup	A light-bulb	An icicle
In the light-bulb	In the icicle	A coil	A burning hair

Deleting the first and the third columns, we'll have the riddle: **on the high floor - iron arm, in the iron arm - a thin cup, in that cup - an icicle, and inside that icicle a hair is burning.** (a lamp).

Using such riddles you can study mechanical parts, structure of plants and animals, even the language. They allow finding common subsystems and finding the differences between objects. But these, of course, are only theories, and the only people who can prove or disprove them are you, colleagues.

CHAPTER 7 The City of Strange Functions

In this city we can teach children to see objects' functions - main and secondary, visible and hidden.

Note: the names of many objects will tell you their functions. For example, a brush, a pointer, an alarm clock. If, using the same rule, we make up names for the other objects - we get riddles. What are shadowers? (Curtains) And so on.

Ex. 7.1

Let's make riddles using the same method: a mirror, a TV, a hammer, a spoon. In other houses inhabitants are more talkative. They are eager to talk about everything they can do. One of them tells us: "I can make holes, you can scratch you back with me, or roll out pastry, or draw. What am I?" (a pencil).

Ex. 7.2

- Compose the longest riddle about a brick, using all the possible uses for the object.

Ex. 7.3

- An opposite problem. In this house the objects live with whose help you cam draw. What are they? (not only Magic Markers, paint, pens, chalk, but also sand, and natural dyes, coffee-grounds, etc.).

Ex. 7.4

Make a famous character of a fairy tale or a cartoon into a riddle and try to explain it to the class without words, with only gestures.

Example: A student makes another person lie on the chair and pretends to construct him, then stretches him a long nose. It is easy - he is making Pinocchio.

Ex. 7.5

The game of opposites: one student is showing one action, and another student - the opposite action. Then the class tries to decide together how one person can do both at the same time. Thus, a new riddle is created.

Example: I show an action - knitting. The students are making gestures showing that they are unknitting my creation. Then we discuss how it is possible to knit and unknit at the same time. (Instead of a ball of string you can use an old sweater, unknitting it to make a new one.)

CHAPTER 8. The City of Contradictions

TRIZ states: **every inventive problem can be stated as a contradiction.** A contradiction in TRIZ is defined as a pair of opposite requirements for the same object (or a part of it). For example, an eye of a needle should be large, so people can put a thread through it easily, and small, so it doesn't rip the material. By solving the contradiction - separating the opposite requirements in time, space or in some other way, we are solving the problem. For example, there are needles whose eyes are made of twisted steel threads. When it is used to sew, the eye is practically non-existent (really small), but when the thread needs to be inserted, one can untwist the eye and it becomes big.

Our goal is to bring the students to understand the contradictions and teach them simplest ways to solve them.

The first step is to teach the students to see positive and negative (good and bad) sides in everything. A game "Good-Bad" can help with it.

Let's look at an object or a situation and try to find as many ways as we can, in which it is good and bad. Usually we start playing that game long before coming to the City of Contradictions. However, it is that city where we can find the Street of Arguments. The objects

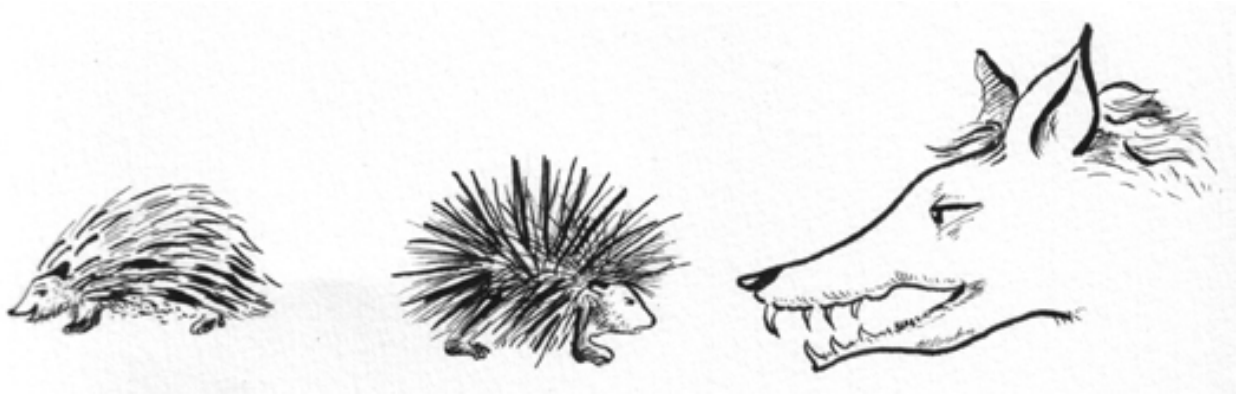
that live here are extremely ill-mannered. As soon as we solve their riddles they, instead of inviting us to come in, start arguing between themselves and ask us to help.

Ex. 8.1

Once two umbrellas got into an argument: one, the parasol, was meant to protect people from the sun, the other - from the rain. The small parasol thinks that sunny weather is bad for you, and he is envious of the other umbrella, who goes out for walks only on rainy days. The other umbrella, however, is sure that sun is good but the rain is bad. The class divides into two teams and helps the umbrellas in their argument.

Ex. 8.2

On the door of one of the houses we find a riddle: **in some places prickly, in some places smooth; for some people prickly, for others smooth; alone prickly, together smooth** (one of the possible answers is a hedgehog. Try to prove it by yourself).



There are two ways of composing riddles in the City of Contradictions. Here is the first method.

Ex. 8.3

Let's compose a riddle with an unknown answer, and then solve it. For that we are going to choose two opposite charactersitics (better if they are physical) and separate them in space **(in some places,** or **inside-outside**, or **one side-the other side**), in time **(first-then, sometimes)** , in relationships **(for some)** or by combining two separate objects **(alone-together).**

For example: **in some places soft, in some places hard** (a jacket with a zipper), **sometimes hard, sometimes soft** (plasticine), **hard for some, soft for the others** (for a swimmer the water is soft, but for a diver it is hard), **alone hard, together soft** (sand).

The second method: composing a riddle about a specific object.

Ex. 8.4

Let's choose an object and find opposite characteristics in it, separated in space, in time and etc. We'll use the following table:

Where? (when? for whom?)	**The trait**	**Where? (when? for whom?)**	**An opposite trait**
Yesterday	Soft	Today	Hard
Yesterday	Light	Today	Dark

Read both rows from left to right and you will get a riddle about dough.

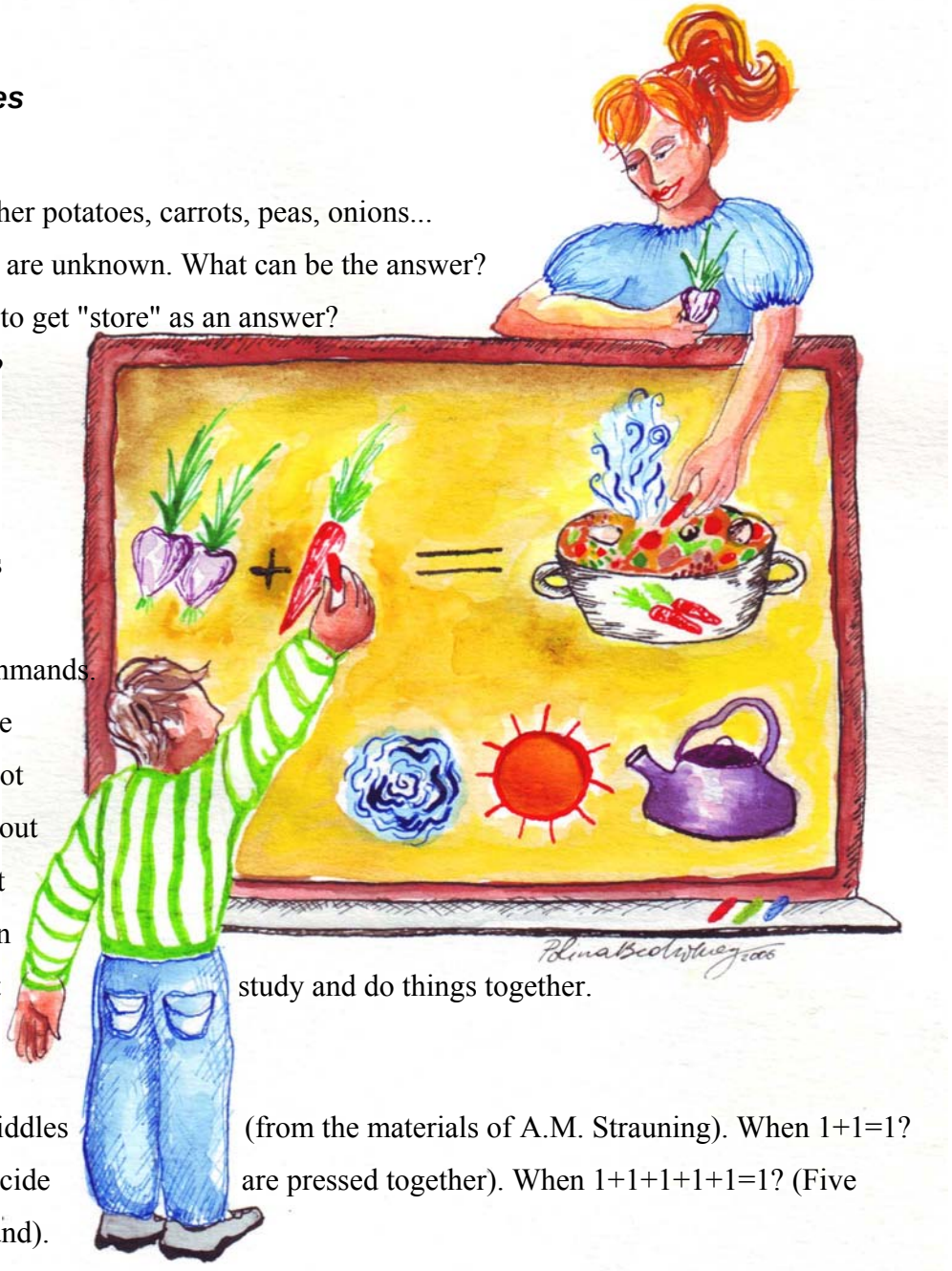
Comment 1

Note that such riddles can be composed not only for the opposite characteristics. For example, ***goes to bathe red and returns black*** *(a crawfish). These types of riddles will be described in more detail in chapter 10. But for now our goal is to bring the students to understand contradictions, so the opposite characteristics should be looked at.*

CHAPTER 9. A school of riddles

The next goal is to show to the students how the material, familiar to them, can be used in school subjects.

There is only one school in the Country of Riddles, but it is a school of riddles. Along with the students we join classes that are both similar and different to what we would see in a normal school.



The math of riddles

Ex. 9.1

We add together potatoes, carrots, peas, onions... The other summands are unknown. What can be the answer? What should we add to get "store" as an answer? (A vegetable garden? A kitchen? Soup?)

Ex. 9.2

The answer is "a class in school".

Name the summands. We discuss it with the students - a class is not only impossible without a teacher, it also can't exist if the students in it aren't friends, don't study and do things together.

Ex. 9.3

Counting in riddles (from the materials of A.M. Strauning). When 1+1=1? (Two pieces of plasticide are pressed together). When 1+1+1+1+1=1? (Five fingers equals one hand).

The students are asked to think up similar problems. For example, 2+2+2+2+2+2=1. (6 people are making a fence, and each brings 2 boards).

Ex. 9.4

Explain the formulas. (The exercise is designed by S.Gin).

Let's make T mean - tasty food, and nT - food that isn't tasty.

T+T=T (eggs with bread)

T+nT=T (bread with salt)

T+nT=nT (honey with salt)

nT+nT=T (cereal with salt)

T+T=nT (tea with fish)

nT+nT=nT (salt with mustard)

Ex. 9.5

Which things can be easily done together, but are hard to do when you are alone? (Playing on swings, trying to get an apple from a high tree). You can make alpinists an example - discuss why they climb mountains in groups.

Writing in riddles

Ex. 9.6

«l» is not only a letter, but can also be a part of other letter. Moving and turning l around, which letters can we make if we draw some more elements on it? (N, T, B, etc.)

Ex. 9.7

Write a large letter or a symbol on a sheet of paper. Draw on it so you will get a real picture.

Reading in riddles

Ex. 9.8

On the blackboard there are parts and pieces of words. Complete them in such a way so you get the whole words: so (solution, parasol, soldier, etc.).

Ex. 9.9

On the blackboard there are words - all from the same sentence. Add more words and compose a whole sentence.

Example: lake, sun, kettle. (By the lake a kettle was boiling; it shined like the sun)

Another possibility is to write a short story from the given words.

Gymnastics in riddles

Ex. 9.10

Turn your head without moving your neck. (turn the rest of your body).

Ex. 9.11

Clap with one hand. (join another person).

Ex. 9.12

Stroke your head without touching it with your hand. (stroke with an object or another student's hand).

Ex. 9.13

Raise your hands over your head but below your desk. (raise your hands while kneeling).

Ex. 9.14

Show a letter (A, B, C, D...), a number or a mathematical figure.

Comment 1

The basics of most exercises are contradictions. It is important that the students understand it is necessary to solve the apparent contradiction instead of playing it down. For example, they shouldn't move their neck at all, it won't do to move it slowly.

Drawing in riddles

Ex. 9.15

- Somebody said: «I am cold and hot, hard and soft». Draw that somebody. One student drew a creature, one half of which was snowy and the other was a heated brick. Another made up a furry animal wearing a belt with a buckle - the buckle is always hard and cold to the touch.

Ex. 9.16

Drawing to the dictations - one square to the right, four down, three to the left... The drawings are made in such a way that each of them is an outline of some object or creature. After the dictation I ask the students to show me their drawings - the mistakes in such drawings can be noticed right away.

This exercise trains memory and the ability to work to instructions. For the students it is simply drawing mysterious creatures.

Doubtless, this list does not include every possibility to be found in the school of riddles. The pedagogues should feel free to design new lessons and exercises based on the age and abilities of their students.

CHAPTER 10. What next?

And so, our trip comes to an end. But the Country of Riddles is truly endless. We can discover new vast lands again and again. As an author who doesn't want to disappoint the readers I see two ways for myself: to add new things to this book again and again, taking the readers for new trips on the unexplored paths, or lay my cards on the table and hope that using my methods the readers will build their very own Country of Riddles.

Trusting my readers I choose the second way.

This chapter is **for adults only.** These exercises, riddles and questions are only for you. It would be wonderful if after reading it you can compose your own materials - just don't try to give this material to the kids directly.

Let's begin with answering a few questions.

Question 1. What is a riddle?

Answer (unscientific): A riddle is an incomplete description of something that is not named in the text. "Why incomplete?" you might ask. "Are there any complete descriptions?" I would answer.

Question 2. What can a riddle be about?

Answer: About anything. You can make a riddle not only about an object, but also about an action. However, this chapter is mostly concentrated on objects.

Question 3. Can any description be considered a riddle?

Answer: No. A riddle has one specific function - it is designed to be solved. In the short text of a riddle the descriptions should be both detailed enough to make finding a solution possible, and brief enough so that the riddle is not obvious. This is why riddles highlight most important and unusual sides of an object.

Question 4. What can we teach children with the help of riddles?

Answer: This question I consider to be of an outmost importance. I'll try to join and complete all the pedagogic goals that were discussed in the previous chapters. Don't forget that we are only talking about using the riddles to develop kids' imagination. In the biology class the goals may be completely different. The basic stages of the training are outlined in the table 1 along with the needed explanation. But first let's look at a following riddle.

It has two parts: one is smooth and the other one ribbed. Its form is like that of a cylinder, made out of plastic. Put it on a level surface - it will be able to stand. Its length is about 3 cm. You can

wear it on the tip of your finger. It's inedible but has a pleasant smell. You can use it to whistle, or just look into it.

If you didn't find an answer yet, let's add something:

It is used to close the tip of a marker.

It is not a real riddle. This is a description of a cap for a marker, written by an eight-year-old student, and the last sentence was in reality first. I didn't ask any leading questions, just told him not to stop. So **what does the Country of Riddles teach us?** Now, studying and analysing the table 1, we can answer that question.

Table 1

What are we learning?	The key word	A possible key question	The key image	The key actions
To single out parts of the object in the riddle	Part	What does it consist of?		Mentally look at the OR through binoculars, watching each part separately
To define super-systems - environment, or the other objects of which OR is a part	Environment	Where? In what?		Mentally draw apart from the OR so you can see its surroundings
To define objects surrounding OR (to familiarize yourself with the super-system)	Surroundings, «neighbours»	What is around it? Among what (who) is it located?		Put yourself in OR's place and look around
To define the characteristics of OR, its parts, environment and the neighbours	Characteristics and relationships	What characteristics does it have? What does or can it do? What can be done with it?		Take it into your hands (first times - physically, then mentally), look it over, touch it, etc.
To find various functions that	Work	What is it for?		Use OR for performing some

OR can perform (useful in a given situation)				work (first physically, then mentally)

Looking at the table you can decide for yourself, which topics you want to give more attention. Now - the exercises.

Ex. 1

Try to find your own versions of key questions, new key images and actions. Can you invent new rows for the table?

Ex. 2

Analyse the following riddles. Try to define which concepts (first column of the table) were used by their authors.

1. *Green but not a crocodile, on four legs but not a chair, wet but not jam. (frog)*
2. *Swims but not a fish, carries people but not a train. (ship)*
3. *On one circle five sticks.* (the palm of human hand with five fingers)

Ex. 3

Choose any object - it is going to be your OR (object of the riddle).

Going through every row of the table, try to compose various riddles. Write down the ones you find most interesting.

You might have noticed that **a lot depends on what ways are used to describe OR.**

Question 5. How can you describe parts, characteristics, place, work?

Answer: There are four basic ways to describe something (see table 2).

Table 2

№	Name of the method of describing	Examples of riddles	Explanation
1.	Direct naming	«With a beard but not an old man, with horns but not a bull» (goat)	Parts and places are directly named.
2.	Denial	«I don't have legs, but I go on and on; I don't have a mouth but I	Absent parts and «neighbours» are named.

		will tell you when to go to sleep and when to get up» (an alarm clock).	
3.	Indefinite description (using such words as «he», «we», «part», «characteristic», «work», etc.)	«Someone is blowing a red balloon in the morning» (sunrise).	«Someone - pointing at a «neighbour» who doesn't exist».
4.	Metaphor - a «mask» for description.	«In the forest a sand mountain is boiling» (anthill).	«Sand mountain» - OR is described, and «boiling» is a metaphorical description of its characteristic.

Unfortunately, the exciting topic of finding and developing images in the riddles is not discussed in this work.

Ex. 4

Read again examples in the table 2 and try to find new methods of description for them (*"With a beard, but not an old man..."; "with a beard"* - a method of direct naming, "*not an old ma*n" - a method of denial, etc.)

Ex. 5

Read the following riddle. Decide which method is used to describe the underlined words. "Over the fields, over the lakes, like white swans, we flew without wings, shedding feathers and down."

Check yourself. The numbers of the rows in the table 2: **1, 1, 4, 2, 4.**

Ex. 6

The following riddles are mostly using direct descriptions. Rewrite them, changing the method of description for denial or metaphor.

1. *Grows, flowers, appears, reddens, is picked and eaten*. (a berry)
2. *Runs, barks, bites.* (a dog)
3. *Red and fat.* (a tomato)

Ex. 7

Choose an OR and compose riddles using various methods of description. It is important to analyse the methods that you use.

I hope that your pedagogical folder of materials received a healthy share of your own interesting and new riddles. That means we can go to the new stage of our work. But before that let's look behind for a moment.

We already know which questions we are going to study with the help of riddles (table 1). We also know which language means can be used (table 2). Now we can look at the most important and difficult question of all:

Question 6. How do we compose exercises for the students?

The rest of the chapter is dedicated to answering this question. Why don't me and you, dear readers, play the box? It's a "morphological box" full of riddles, which is presented in the table 3.

Table 3

№	A	Amount B	Characteristic C	Work D
1.	Part			
2.	Place			
3.	Neighbour			
4.	Object			
5.	Time	XXXX	XXXX	XXXX

Comment

XXX means that this square is not used.

Ex. 8

I'll teach you to name every square of the table (excluding the ones with the XXXX sign). For example: A-1 - part; B-1 - number of parts; C-1 - characteristics of the part; D-1 - work of the part; C-2 - characteristic of the place,

B-3 - number of neighbours, etc.

If you prefer visual images, try to find a visual for every square (see table 1).

For example: I don't doubt it that you will come up with something of your own invention.

Ex. 9

Using basic questions from the table 1, come up with a key for every square. For example, D-3 (work of the neighbours).

Table 4

What is around? (neighbours)	What purpose do they serve?

Ex. 10

Choose an OR that you like and compose riddles using the given basics. Composing the riddle, change the names in the first column to indefinite. In the second column you can use a direct name, or denial, or, if you have enough fantasy, a metaphor.

Example: Let's compose a riddle using the table from the exercise 10. First we'll choose an OR, to which a simple and interesting description can be given through the objects that surround it (through its "neighbours"). For example, **food on a plate.** Filling out the table:

Table 5

What's around?	What do the neighbours do?
The plate	Holds the food
A fork	Carries the food to the mouth
A knife	Cuts

Here is the riddle: «What am I? I'm held by the first, cut by the second and carried by the third».

The squares can be chosen according to the topic of the lesson. If the class is studying parts - we'll take the squares of the first row, characteristics - first column, and if it is necessary to take up super-systems (place, surroundings) and work - we'll use the square D-2.

Now we can look at the new exercises that allow tracking the **changes and relationships** between objects and their characteristics.

Ex. 11

Read three riddles and try to understand the way they are made up. For that note to which square of the table 3 each word can be ascribed.

1. *During the day it is a hoop, during the night it is a snake*. (a belt)
2. *On the street it looks like a pole, in the house it is a blanket*. (smoke)
3. *Born in the forest, works in the house.* (a wooden broom)

Check yourself.

1. A-5, C-4, A-5, C-4.

2. A-2, C-4, A-2, C-4.

3. A-2, D-4, A-2, D-4.

Interesting order, isn't it? It looks like to compose such riddles we have to pull out of the box not one, but two squares. And our riddle **will have a minimum of two lines: it will tell how, changing one characteristic, you can change the other.**

Usually, however, I make it easier on myself - I plan only the first half of the table (the source of changes or relationships), and the second is given by a general question "what is happening?" or "what is changing?" The content of the second half will depend on the object itself.

Example: I take any square - say D-3 (characteristics of neighbours). My task is to compose, in a group with my students, a riddle in which the OR depends on the characteristics of the surroundings. A classic example would be the cuckoo's eggs. It is well known that, putting its eggs into others' nests, a cuckoo will always colour them according to the colour of the nest owner's eggs. Let's make a table.

Table 6

What's around?	**How do the "neighbours" look?**	**What's happening?**
Eggs of the other bird	Grey	Cuckoo's egg becomes grey
Eggs of the other bird	Speckled	Cuckoo's egg becomes speckled

The riddle is: «When others are grey, it is also grey; when others are speckled, it is also speckled».

Ex. 12

What table can be made for this riddle: «Sometimes wet, sometimes dry; the bottom is wide, the top is narrow; for a human it is bitter, for a cow it is sweet» (grass).

Ex. 13

Try to compose tables and riddles based on the squares «characteristics of place», «time», «work of a part» (similar parts should be used), «characteristics of OR». Finally, the last topic I give to your attention is **description through comparison.**

You can compare anything - objects, their parts, their surroundings, their characteristics, work, time, amount. This question was studied in detail in the City of Similarities and Differences. Here I am only going to draw the conclusions. (Some materials have been taken from the seminar of I.N.Murashkovska on the speech development).

First of all, an object is always compared with something else - if a riddle is based on comparison, there is always a **mediator** - something an object is compared with. *A bell is ringing*

- *if we say* «*laughing*» it means we compare it with a human. *A person is smiling - we say* «*shining*»*,* comparing a person with the sun. We can compare both characteristics and work: «*runs like there is a fire*», etc.

Secondly, description through comparison implies three elements: **the descriptive part, the mediator** (similarities) and **the differing part** (differences).

Thirdly, **description, differences** and **the mediator** can be built according to almost any square of the morphological box (table 3).

Ex. 14

Complete the following sentences: «*Perfume are like jewellery*»*:* in work (make a woman prettier), by characteristics of part (the perfume bottle is just as hard as jewels and shines in the same way); «*A lamp is different from a mirror*»*:* in work (a lamp lights the room, and the mirror reflects what is going on in there)...

Ex. 15

Define which squares of the table were used for the descriptions and mediators in the following riddles.

1. *Slippery but not ice, cold but water, long but not a tale* (a snake).
2. *The eyes like cinders, the hair like tree branches, the nose like a hook, arms like sticks* (a goblin).

Check yourself:

1. Descriptions (left half of the riddle): C-4, C-4, C-4.
   Mediators (right half of the riddle): A-4, A-4, A-4.
2. Descriptions (left half of the riddle): A-1, A-1, A-1.
   Mediators (right half of the riddle): A-4, A-4, A-4.

Ex. 16

Define which squares of the table 3 were used to create the **mediator** and the **differences** in the following riddle: «No windows, no doors, but the room is full of people» (a cucumber).

Check yourself:

Differences (first half): A-1, A-1.

Mediator (second half): A-4.

The full scheme of the riddle based on comparison looks as follows:

Table 7

Description	Mediator	Differences

However, usually in riddles any two columns are used (description and the mediator, the mediator and the differences, description the differences). Let's look at the following riddle: «Jumps but doesn't bark, bumps but doesn't cry» (a ball). A table would look as follows:

Table 8

Description	The mediator	Differences
What does it do?	What is it like?	How is it different?
Jumps	A dog	Doesn't bark
Bumps	A kid	Doesn't cry

In this case the mediator is not mentioned in the text of the riddle. Returning to the chapter 4 we'll see that the table in the ex. 4.2 («What is it like? How is it different?») is composed of **the mediator** and **the differences,** whereas the table in the exercise 4.3 («What does it do? What is it similar to? ») is composed of **the mediator** and **the description.** Using the table 3 you can access more specific questions.

Here our conversation about composing riddles ends, and we will now proceed to the very last chapter of the book.

CHAPTER 11. Why do I love riddles?

When I made a decision to teach elements of TRIZ to the children with the help of riddles, I felt the necessity to explain my choice in more detail. Even more so because I think that whatever I had to teach - reading, writing or math - I would still choose the same way to do that.

Pedagogues who know TRIZ came into schools and kindergartens with a clear goal - to develop a new method of teaching, which would include education through creative work, through solution of inventive problems. Of course, such problems are not enough; the children should also take in and memorize quite a lot of information.

Take, for example, the systematic approach - the ability to see an object as a system of parts or as a part of something bigger. Here the exercises are not too creative: name the parts of an object, name something of which it is, etc. Same happens to all instructions in TRIZ: to defining a contradiction, defining the resources and function of an object, etc. All such exercises require training. And where the training starts, the creative work is practically finished. And that's not too tragic, if not for a small detail - children are rarely interested in reproductive exercises. If they do such exercises with enthusiasm, it is more because they want to earn the teacher's approval. The hunger of knowledge, which is a foundation of every successful education, is practically not formed.

We should add the fact that not for all children self-affirmation can serve as a stimulus. Lazy students and low-achievers thrive on reproductive problems. A contradiction appears - there are should be non-creative problems so the children receive the necessary knowledge, and shouldn't be so the students don't lose interest for studying. Riddles present one of the ways for solving that contradiction.

In reality, looking from a teacher's point of view, the exercise "describe an apple" doesn't differ from an exercise in which a student is composing a simple descriptive riddle about an apple. But, while going through that low in creativity exercise, the student is thinking about the person behind the door, for whom, the only person in class, solving the riddle is a real creative task. Children are not busy reciting the old dusty truths about an apple, they are composing a creative riddle for their class-mate. You have to agree, there is a great difference!

That's why I love riddles so much. Perhaps now, colleagues, you will share my passion.

I wanted to create material easy to read in the beginning and very interesting, despite its complex structure, in the end. I hope that the name TRIZ did not scare those who did not hear about it before. And maybe, just maybe, I was able to transfer if not the knowledge, then at least the feeling of gladness from studying "children's" TRIZ.

Giving my work out to be judged I, as usual, hope for comments and help of my fellow teachers.

Good luck to us!

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