Ⓜ Unterrichtsvorschlag

Abwechslung zum Schuljahresabschluss

Mathematics in English

Jetzt gegen Schuljahresende kommen einzelne Schüler schon mit: «Sie, ich bin fertig. Was kann ich noch machen?» Du kannst dein Tablet, dein Smartphone oder deinen Laptop benutzen, also alle Übersetzungsprogramme. Aber zum Nachrechnen kannst du auch diese alltäglichen Werkzeuge gebrauchen. Unsere Kinder arbeiteten in der Key Largo School in Florida, USA, mit diesen Arbeitsblättern. Interessant ist noch, wie dort viel mehr Wert auf die Lerntechniken gelegt wird. In einem gelben Feld links oben auf vielen Seiten werden die Kinder daran erinnert, welche Lernmethoden sie schon konkret an einem Beispiel kennen gelernt haben. Teils auch bei der mündlichen Besprechung mit der Klassenassistenz wird gefragt: «Mit welcher Methode hast du gearbeitet?» Elvira Braunschweiler

Liebe Klasse

Zwei Kinder unseres Schulhauses sind mit den Eltern für ein Jahr nach Key Largo in Florida umgezogen. Am ersten Schultag mussten sie diese Arbeitsblätter lösen. Sie durften ihre Tablets benutzen um ***a)*** *einzelne Wörter zu übersetzen,* ***b)*** *um ganze Sätze im Übersetzungsprogramm zu verstehen, wobei dies nicht immer klappte,* ***c)*** *sie konnten die Rechnungen überprüfen. Die Schweizer waren erstaunt, wie viel die Amerikaner schon über Türme in Paris usw. lernten. Allerdings haben sie beim Kontrollieren im Internet herausgefunden, dass die Höhe der Türme nicht immer übereinstimmte, teilweise weil die Antennen zuoberst nicht mitgerechnet wurden. Im Internet suchten sie auch, wie schwer «one ounce = oz» ist, obwohl das Gewicht nicht in Gramm umgerechnet werden musste. Nach diesen (und anderen) Tests wurden sie der 4., 5. oder 6. Klasse zugeteilt und fühlten sich dort das ganze Jahr sehr wohl. Eigentlich wollten sie gar nicht mehr zurück in die Schweiz … Hauptziele waren: Englischkenntnisse überprüfen, logisches Denken prüfen, die Rechnungen selber waren eher leicht.*

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 1
Using the Strategies

Use one or more of the strategies listed to solve each problem below.

1. Jolene took a math test. There were 20 problems on the test. Jolene got 10 more right answers than wrong answers. How many answers did Jolene get right?

2. The school play was about a king and a queen. Four boys, Nick, Preston, Robbie, and Donald, wanted to be king. Two girls, Hilary and Tess, wanted to be queen. How many different ways could the teacher choose a king and a queen?

3. The tallest girl on the team is the center. Peggy is taller than Linell. Ginny is shorter than Linell. Nancy is taller than Peggy. Edie is shorter than Peggy. Who is the center?

4. The basketball team and baseball team have a total of 24 players. There are 12 basketball players and 18 baseball players. How many players are on both the basketball team and the baseball team?

It was oral examination in the standard two. The class teacher asked various questions to the students. She asked Tom: Can you tell me a name of an animal that starts with alphabet «E?» Tom replied: «ELEPHANT». Teacher asked him again to name an animal that starts with alphabet «T». Tom replied: «Two elephants.» Teacher asked him the same question. Tom replied: «Ten elephants.» Annoyed the teacher asked him to name an animal that starts with alphabet «M». Tom replied: «Mother Elephant.» The angry teacher repeated the same question. Cool Tom replied: «May be an elephant.»

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 2
Using Data from a Table

HEIGHTS OF SOME FAMOUS TOWERS

Tower	Location	Height
Leaning Tower of Pisa	Pisa, Italy	54 m
Skylon Tower	Niagara Falls, Canada	156 m
Space Needle	Seattle, USA	180 m
Stuttgart Tower	Stuttgart, West Germany	211 m
Cairo Tower	Cairo, Egypt	225 m
Eiffel Tower	Paris, France	295 m

Use the table to solve the following problems.

1. How much higher is the Space Needle than the Skylon Tower?
2. The Moscow Tower is 222 m higher than the Eiffel Tower. How high is the Moscow Tower?
3. How much higher is the Cairo Tower than the Skylon Tower?
4. What is the difference in the heights of the Leaning Tower of Pisa and the Stuttgart Tower?

The teacher asked the students to tell the most common word used by students in a classroom. Suddenly a student got up and said: «Can't Sir!» Brilliant! You are right, the teacher said!

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 2
Using Data from a Table

5. What is the difference in the heights of the Space Needle and the Cairo Tower?

6. The Washington Monument is 54 m shorter than the Cairo Tower. How tall is the Washington Monument?

7. The Statue of Liberty in New York is 54 m taller than the Leaning Tower of Pisa. How tall is the Statue of Liberty?

8. What is the difference in the heights of the tallest tower in the table and the shortest tower in the table?

9. The Great Pyramid in Egypt is 73 m shorter than the sum of the heights of the Leaning Tower of Pisa and the Skylon Tower. How tall is the Great Pyramid?

10. Which tower in the table is just 9 m shorter than the sum of the heights of the Leaning Tower of Pisa and the Space Needle?

11. **Try This** Tower A is shorter than Tower B. Tower A is taller than Tower C. The height of Tower D is between Towers A and C. Which tower is the shortest?

Johnny asked to Sam what they will do that night.
Sam said: «We will flip a coin.»
Then Johnny said: «If it comes head, we will go for movies. If tails, we will play cards, if it stands on edge, we will study!»

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 3
Practice

Solve.

1. There are 72 instruments in the orchestra. 26 are violins. How many of the instruments are not violins?

2. James practices the violin the same number of hours every day. He practiced 93 hours in March (31 days). How many hours does he practice a day?

3. There are 27 different sizes of clarinets. The longest is 274 cm and the shortest is 35 cm. What is the difference in these two sizes?

4. In the week before the concert the Music Club sold 495 tickets. On the day of the concert they sold 35 tickets in the afternoon and 108 tickets at night. How many tickets were sold?

5. The orchestra practiced 225 minutes in one week. Each practice session was 45 minutes long. How many sessions did they have?

6. The orchestra spent $304 to buy 38 new music stands. Each stand cost the same amount. What was the cost of each stand?

7. Ms. Adams bought 12 tickets. How much change did she get from $50 if the tickets cost $3.75 each?

8. There were 430 people at the Saturday night concert. 295 of them sat in chairs. The rest sat on benches. Each bench holds 15 people. How many benches were needed?

9. **Try This** There were 25 people in the front row. There were 3 more children than adults. How many children sat in the front row?

The teacher asked the students to tell the importance of the year 1809. John stood up and said: «Abraham Lincoln was born.» Then the teacher again asked the students to tell the importance of another year, 1819. Then Sam suddenly stood up and said: «Abraham Lincoln was ten years old!»

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 4
Using Data from an Advertisement

Use the information on the packages to solve the following problems.

1. How many plates are in a package of paper plates?
2. What is the price of 1 paper plate?
3. How many ounces does the package of hamburger buns weigh?
4. How much does the box of trash bags cost in dollars and cents?
5. How many ounces does each hamburger bun weigh?
6. What is the price of each napkin?
7. How many ounces of juice will the 51 foam cups hold?
8. How many packages of paper plates can be bought with $10?
9. If you bought 5 boxes of plastic tableware, how many pieces would you have?
10. What would be the price of one trash bag?
11. How much does it cost to buy 3 packages of hamburger buns?
12. What is the price of 1 slice of cheese?
13. If you need 125 sandwich bags, how many boxes should you buy?
14. If you buy 4 packages of hamburger buns and use 39 of them, how many buns will be left?
15. If you use $5.00 to buy 1 package of napkins and 1 package of cups, how much change will you get?
16. **Try This** Meg, Tad, Evie, Dan, and Kari are in line at the market.
Kari is between Meg and Tad.
Dan is between Tad and Kari.
Tad is ahead of Evie.
Meg is first in line.
Who is last?

Teacher: «Which one is closer, the sun or Africa?»
Johnny: «The sun.»
Teacher: «Why?»
Johnny: «We can see the sun all the time, but can't see Africa.»

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 5
Practice

Solve.

1. The library shelf is 76 cm long. Mrs. Abbot wants to put new books on the shelf. Each book is 4 cm thick. How many books can she fit on the shelf?

2. The library has 56 books about desert animals and 83 about jungle animals. How many fewer books are there about desert animals than about jungle animals?

3. The library has 87 books on water animals. Mrs. Abbot ordered 9 more. How many books will the library have on water animals?

4. George returned a library book that was 6 days overdue. He paid a 90c fine. What was the fine for each day?

5. Mrs. Abbot has $75 to buy new books for the library. Each book costs $9. How many books can she buy? How much money will be left?

6. There are 23 history books on each of 4 shelves and 18 history books on a fifth shelf. How many history books are there?

7. There are 56 old chairs and 24 new chairs in the library. Mrs. Abbot wants to put 6 chairs at each table. At how many tables can she put 6 chairs?

8. **Try This** Mrs. Abbot took all of the books out of a bookcase. She put 28 books on one table. Then she put the rest on another table in 7 stacks of 8. How many books were in the bookcase when she started? Hint: Work backward.

The teacher said to the students to convert the sentence: «I killed a person» into future tense.Suddenly Johnny stood up and said: «Sir, the future tense is, you will go to jail!»

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 6
Practice

Many people collect stamps as a hobby. Different stamps, new or old and local or foreign, may have interest and value to the stamp collector.

1. Michele started her stamp collection with a package of 24 stamps. 1/3 of them were from France. How many of Michele's stamps were from France?

2. Rich bought a package of 36 stamps. 1/4 of his stamps were from England. How many of Rich's stamps were from England?

3. Michele paid $2.98 for her stamps. Rich paid $4.25. How much more did Rich pay than Michele?

4. Kathy has a book of stamps. 1/5 of them are from Mexico and 1/4 of them are from Canada. Are there more from Mexico or Canada?

5. Susan has 6 full pages of stamps in her book. Each page has 24 stamps. How many stamps does Susan have on these 6 pages?

6. Candy had 84 stamps. She sold 1/3 of them. How many stamps did Candy sell?

7. Connie has a collection of 96 stamps. 1/2 of them are from Europe. How many stamps does Connie have from Europe?

8. **Try This** Ted put 12 stamps on one page of his stamp book and 15 on another. He put the rest on 3 pages of 8 each. How many stamps are in the package? Hint: Work backward.

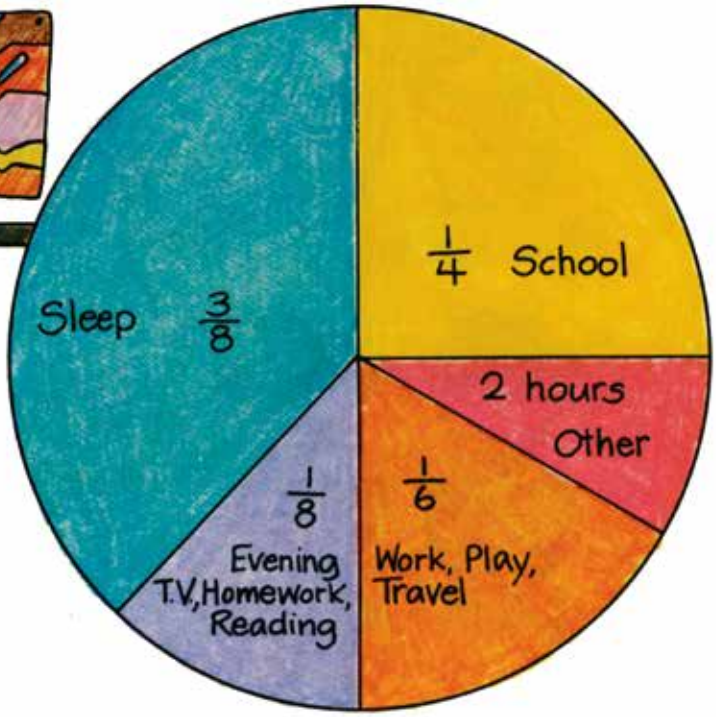
One day the teacher asked Sam: «Did your father help you with your homework?» Sam simply said: «No, he did it all by himself!»

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 7
Using Data from a Circle Graph

The full circle stands for 24 hours (1 day). The parts of the circle show the fraction of the day used for different things. Use the circle graph to solve the problems below.



24 hours
How Jaime spends his day

1. Jaime is in school 1/4 of the 24 hours. How many hours does Jaime spend in school?

2. How much time does Jaime have in the evening?

3. One evening Jaime took 35 minutes to eat and 45 minutes for homework. How much time did he take for these two things?

4. Jaime takes 1/5 of an hour to take a bath. An hour has 60 minutes. How many minutes does it take Jaime to bathe?

5. How much time does Jaime take for work, play, and travel?

6. One Saturday, Jaime took 7 trips on his bicycle to deliver groceries. Each trip took about 25 minutes. How long did the 7 trips take?

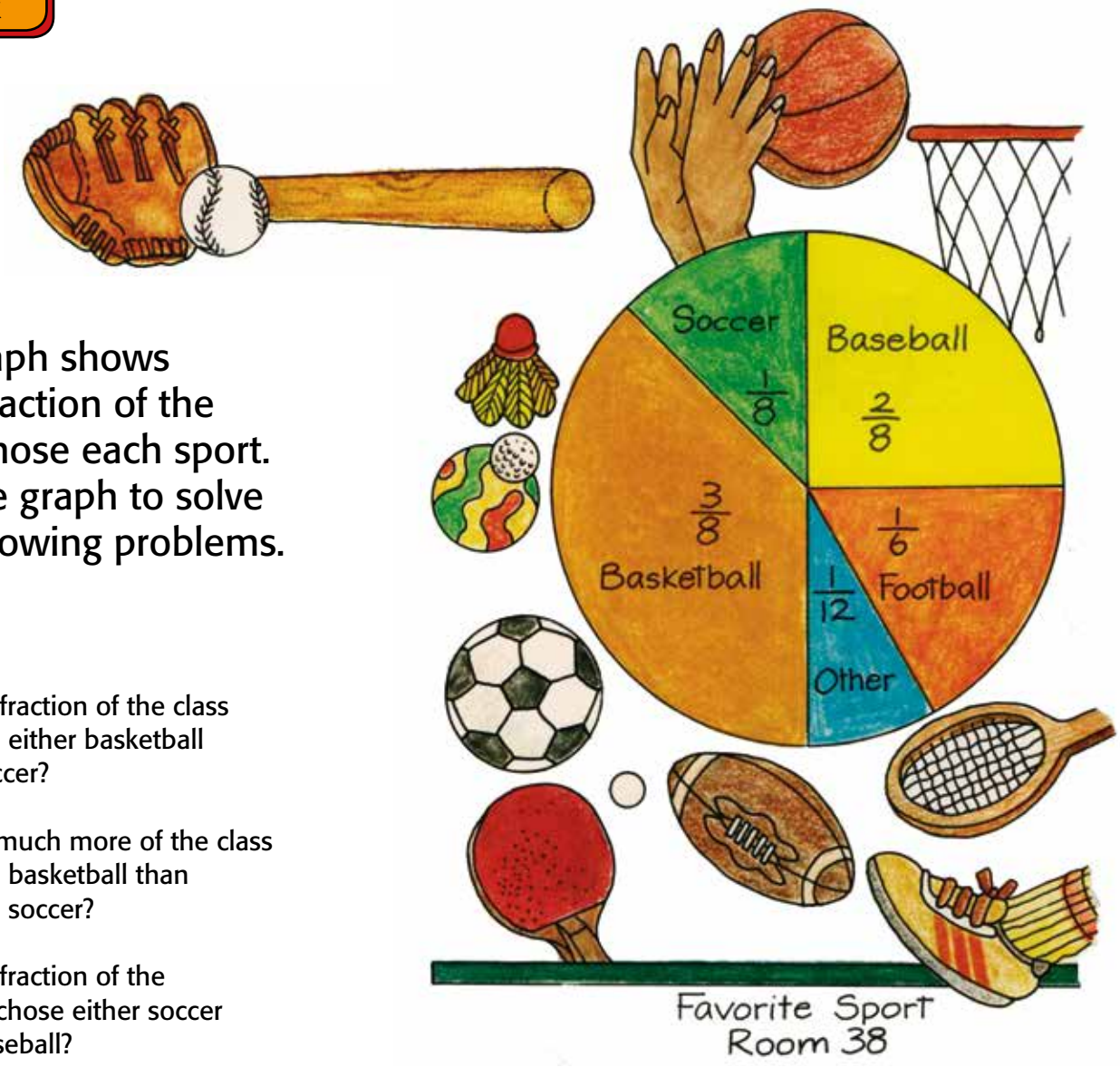
7. **Try This** Ruben started painting at 12:00 noon. Jaime joined, him later. Ruben quit at 4:00. Jaime worked until 6:00. Jaime worked 5 hours. How long did they work together? Hint: Use logical reasoning.

Little Sam (on phone): «My son is having high fever and he won't be able to come to school today.» Teacher: «Who is this?» Little Sam: «This is my father speaking!»

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving 8
Using Data from a Circle Graph



The graph shows what fraction of the class chose each sport. Use the graph to solve the following problems.

1. What fraction of the class chose either basketball or soccer?
2. How much more of the class chose basketball than chose soccer?
3. What fraction of the class chose either soccer or baseball?
4. How much more of the class chose basketball than baseball?
5. What fraction of the class chose either basketball or baseball?
6. There were 24 children in the class. How many of them chose football?
7. Of the 24 children in the class, how many of them chose basketball?
8. How many more of the children chose baseball than football?
9. **Try This** Tickets are $2 and $3. Nancy sold 7 for $18. How many of each did she sell?

Son: «I am not able to go to school today.»
Father: «What happened?» Son: «I am not feeling well.»
Father: «Where are you not feeling well?»
Son: «In school!»

Joke!

Picture Graphs

Tom Brown owns a TV store.
The **picture graph** below shows how many TVs he sold in each of the first 6 months of the year. Each picture means 10 TVs sold. So Tom sold **5 × 10,** or **50,** TVs in January.

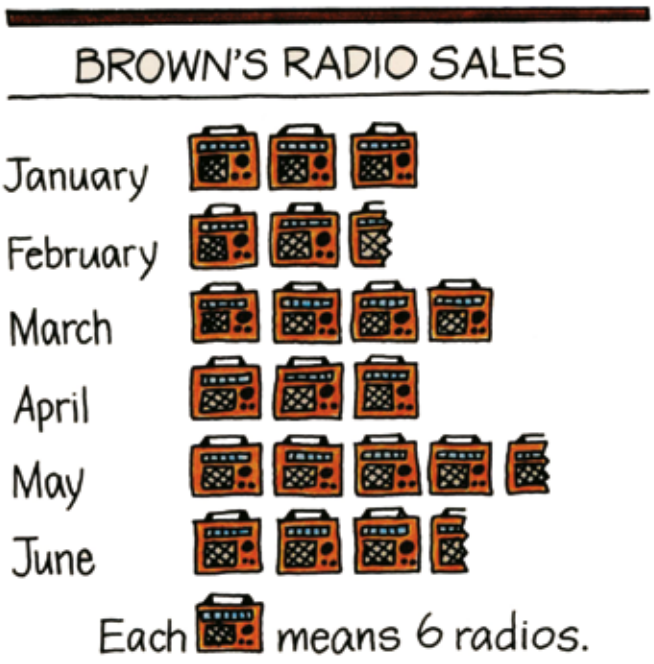
1. How many TVs did Tom Brown sell in February?
2. In what month were 60 TVs sold?
3. In what month were the most TVs sold? How many were sold?
4. Estimate how many TVs were sold in April.
5. Estimate the number of TVs sold in June.

Teacher: «Why are you late?»
Student: «Because of the sign on the road.»
Teacher: «What type of sign?»
Student: «The sign that says School Ahead, Go Slow!»

Joke!

Picture Graphs

Use the radio graph to answer questions 1–5.



1. How many radios were sold in March?
2. In what two months were the same number of radios sold?
3. Estimate the number of radios sold in June.
4. In what month were the fewest radios sold? Estimate how many were sold.
5. About how many radios were sold in May?

Use the stereo graph to answer questions 6–8.

6. How many stereos were sold in January?
7. In what two months were about the same number of stereos sold?
8. Estimate the number of stereos sold in June.
9. Make your own picture graph for this data.

   TVs sold:
   July–12, August–18,
   and September–15.
   Let each picture mean 3 TVs.

Sam: «Dear sir, I want to ask you something.» Teacher: «Yes Sam, ask me, what do you want?» Sam: «Sir, do you punish anyone for something he did not do?»Teacher: «No Sam. Why should I?» Sam: «Thank you sir. That´s a relief. I haven´t done the homework.»

Joke!

QUESTION
DATA
PLAN
ANSWER
CHECK

Problem Solving
Using the Strategies

Use one or more of the strategies listed to solve each problem.

1. The bus left the downtown station and traveled 2 hours before stopping. The rest stop lasted 20 minutes. The bus then traveled an hour and a half before arriving in Middletown at 4:30 p.m. What time did the bus leave for Middletown?

2. There were 20 people left on the bus when it got to Middletown. There were 2 more men than women. How many men were on the bus?

3. On the trip, the bus passed through 5 towns. Bern was before Aden. Aden was before Dale. Eaton was after Dale. Center was between Bern and Aden. Which town did the bus leave last?

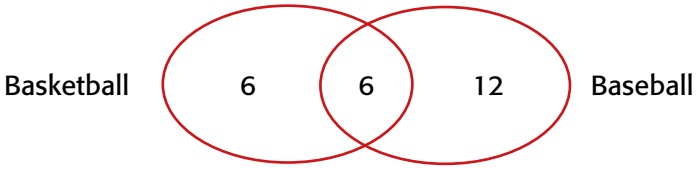
4. When the bus loaded to return, there were 3 empty seats – one in front, one in back, and one in the middle. The bus stopped at Bern and picked up a man and a woman. How many ways could they sit down?

Math Teacher: «Sara, what do you get when you subtract 897 from 1824 and add 176 and divide the answer by 3?»
Sara: «A headache, Madam.»

Joke!

Lösungen

Problem Solving 1: 1. 20–10 = 10,10: 2 = 5, 10 + 5 = **15 answers; 2.** Nick-Hilary, Nick-Tess, Donald-Hilary, Donald-Tess, Preston-Hilary, Preston-Tess, Robbie-Hilary, Robbie-Tess = **8 different ways; 3.** Ginny-Linell-Peggy, Edie = shorter than Peggy, Peggy-Nancy, **Nancy is the tallest and is in the center; 4.** 12 + 18 = 30, 30–24 = 6



Problem Solving 2: 1. 180–156 = **24 m; 2.** 295 + 222 = **517 m; 3.** 225–156 = **69 m; 4.** 211– 54 = **157 m; 5.** 225–180 = **45 m; 6.** 225–54 =**171 m; 7.** 54+54 =**108 m; 8.** 295–54 = **241 m; 9.** 54+156 = 210, 210–73 = **137 m; 10.** 54+180 = 234, 234–9 = **225 m = Cairo Tower; 11.** B-A-C, B-A-D-C, **C is the shortest**

Problem Solving 3: 1. 72–26 = **46 instruments; 2.** 93:31 = **3 hours a day; 3.** 274–35 = 239 cm = **2 m 39cm ; 4.** 495+35+108 = **638 tickets; 5.** 225:45 = **5 sessions; 6.** 304:38 = **$ 8; 7.** 12×3.75 = 45, 50–45= **$ 5 ; 8.** 430–295 = 135, 135:15 = **9 benches; 9.** 25–3 = 22, 22:2 = 11,11+3 = **14 children**

Problem Solving 4: 1. 75 plates; **2.** 300:75 = **4 cents; 3. 24 oz; 4. 3 $ 90 c; 5.** 24:12 = **2 oz 6.**120:60 = **2c; 7.** 51×6 = **306 oz ; 8. 3 packages; 9.** 5×24 =**120 pieces; 10.** 2 ply:2×15 = 30, 390:30 = **13c; 11.** 3×204 = **612, $ 6.12; 12.** 648:72 = **9 cents ; 13. 3 boxes** (3×48); **14.** 4×12 = 48, 48–39 = **9 buns; 15.** 120+255 = 375, 500–375 = 125, **$1.25; 16.** Meg-Kari-Dan-Tad-**Evie**

Problem Solving 5: 1. 76:4 = **19 books; 2.** 83–56 = **27 books; 3.** 87+9 = **96 books; 4.** 90:6 = **15 cents; 5.** 75:9 = **8 books, $ 3 left; 6.** 4×23 = 92, 92+18 = **110 history books; 7.** 56+24 = 80, 80:6 = **13 tables; 8.** 7×8 56, 56+28 = **84 books.**

Problem solving 6: 1. 24:3 = **8 stamps; 2.** 36:4 = **9 stamps; 3.** 4.25–2.98 = **$ 1.27; 4. More from Canada; 5.** 6×24 = **144 stamps; 6.** 84:3 = **28 stamps ; 7.** 96:2 = **48 stamps; 8.** 3×8 = 24, 24+15+12 = **51 stamps**

Problem Solving 7: 1. 24:4 = **6 hours; 2.** 24:8 = **3 hours; 3.** 35+45 = 80 min = **1 hour 20 min; 4.** 60:5 = **12 min; 5.** 24:6 = **4 hours; 6.** 7×25 = 175 min = **2 hours 55 minutes; 7.** 6:00–5 hours = 1:00. They worked **3 hours** together, from 1:00 until 4:00.

Problem Solving 8: 1. 3/8+1/8 = **4/8 = 1/2; 2.** 3/8–1/8 = **2/8 = 1/4; 3.**1/8+2/8 = **3/8; 4.** 3/8–2/8 = **1/8; 5.** 3/8+2/8 = **5/8; 6.** 24:6 = **4 children 7.** 24:8 = 3, 3×3 = **9 children; 8.** 24:8 = 3, 3×2 = 6, 6–4 = **2 children; 9.** $2+$3 = $5, $18: $5 = 3×and $3 left- 3×$2, 3×$3 and 1×$3–**3×$2+4×$3**

Picture Graphs: Brown´s TV Sales: 1. 4×10 = **40 TVs; 2. In May** (6×10); **3. In March,** 8×10 = **80 TVs; 4. 65 TVs; 5. 35 TVs**

Brown's Radio and Stereo Sales: 1. 4×6 = **24 radios; 2. January and April** (18 radios); **3.** 3×6 = 18,18+3 = **21 radios; 4.** February, 2×6 = 12, 12+3 = **15 radios; 5.** 4×6 = 24, 24+3 = **27 radios; 6.** 4×4 = **16 Stereos; 7. March and May; 8.** 5×4 = 20, 20+2 = **22 Stereos;**

9. Problem Solvings (Bus): 1. 12:40

2. 20–2 =18,18:2 = 9, 9+2 = **11 men** (and 9 women); **3.** Bern-Center-Aden-Dale-Eaton. **Eaton**

4. m m w w e e (e = empty) Solution: **6 possibilities**
w e m e m w
e w e m w m or: 1×2×3 = **6**