Varied Fluency
Step 1: Pictograms

National Curriculum Objectives:

Mathematics Year 3: (3S1) Interpret and present data using bar charts, pictograms and tables

Mathematics Year 3: (3S2) Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables

Differentiation:

Developing Questions to support reading and interpreting of pictograms, using 1:1, 1:2 and 1:10 correspondence. No half pictures.

Expected Questions to support reading and interpreting of pictograms, using 1:1, 1:2, 1:5 and 1:10 correspondence. Each image represents the same within one graph, including half pictures.

Greater Depth Questions to support reading and interpreting of pictograms, using 1:1, 1:2, 1:3, 1:5 and 1:10 correspondence. Different values represented within one graph, including half pictures.

More Year 3 and Year 4 Statistics resources.

Did you like this resource? Don't forget to review it on our website.

Pictograms

1a. Complete the missing sections using the information below.

Month	Number of Children
January	
February	☗ ☗ ☗
March	
April	☗ ☗ ☗ ☗ ☗ ☗
May	

Key: ☗ = 1 child

A. 4 children have their birthday in January.

B. 2 more children have their birthday in March than February.

C. 3 fewer children have their birthday in May than April.

1b. Complete the missing sections using the information below.

Sandwich	Number of Children
Cheese	◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯
Ham	● ● ●
Tuna	
Jam	
Chocolate	

Key: ◯ = 2 children

A. 12 children like tuna sandwiches.

B. 4 more children like jam sandwiches than tuna.

C. 8 fewer children like chocolate spread sandwiches than cheese.

2a. Answer the questions about Year 3's favourite sport.

Sport	Number of Children
Football	⚽ ⚽ ⚽ ⚽ ⚽ ⚽
Tennis	◯
Rugby	🏉 🏉 🏉
Cricket	◯ ◯
Netball	◯ ◯ ◯ ◯
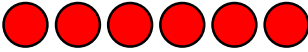
Key: 1 picture = 2 children

A. How many children like netball?

B. How many children like cricket and rugby?

C. How many more children like football than tennis?

D. How many children voted for their favourite sport?

2b. Answer the questions about favourite breakfast.

Breakfast	Number of Children
Cereal	● ● ● ● ● ●
Toast	● ● ● ● ●
Croissant	●
Eggs	● ● ● ●
Porridge	● ●

Key: ◯ = 10 children

A. How many children like porridge?

B. How many children like eggs and toast?

C. How many fewer children like croissants than cereal?

D. How many children voted for their favourite breakfast?

Pictograms

3a. Complete the missing sections using the information below.

Transport	Number of Children
Walk	
Bike	🚲
Car	🚕🚕🚕🚕🚕🚕🚕
Bus	
Taxi	

Key: 1 picture = 5 children

A. 5 fewer children walk to school than come by car.
B. Half as many children cycle to school than come by bus.
C. Four times as many children come by taxi as cycle to school.

E

3 VF

3b. Complete the missing sections using the information below.

Club	Number of Children
Karate	🧍🧍🧍🧍🧍🧍
Art	
Singing	🧍🧍🧍
Puzzles	
Sewing	

Key: 🧍 = 10 children

A. 5 more children go to art club than singing club.
B. Twice as many children go to puzzles club than art club.
C. Half as many children go to sewing club as puzzles club.

E

3 VF

4a. Answer the questions about the number of pieces of fruit sold.

Fruit	Number of Pieces of Fruit
Cherries	🍒 🍒
Apple	🍎 🍎 🍎 🍎 🍎 ◡
Orange	🍊 🍊 🍊 🍊 🍊
Pear	🍐 🍐 🍐 🍐
Watermelon	🍉 🍉 🍉 🍉 🍉 🍉 🍉 🍉

Key: 1 picture = 2 pieces of fruit

A. How many apples were sold?

B. How many more oranges were sold than cherries?
C. How many pieces of fruit were sold in total?
D. How many fewer pears were sold than watermelons?

E

3 VF

4b. Answer the questions about the number of cupcakes sold in a cafe.

Cupcake	Number of Cupcakes Sold
Carrot	🧁 🧁 🧁
Lemon	🧁 🧁 🧁 🧁 🧁 🧁 🧁 🧁 🧁
Chocolate	🧁 🧁 🧁 🧁 🧁 🧁
Vanilla	🧁 🧁 🧁 🧁
Red Velvet	🧁 🧁 🧁 🧁 🧁

Key: 🧁 = 5 cupcakes

A. How many chocolate cupcakes were sold?
B. How many fewer carrot cupcakes were sold than red velvet cupcakes?
C. How many cupcakes were sold in total?
D. How many more lemon cupcakes were sold than vanilla cupcakes?

E

3 VF

Varied Fluency – Pictograms – Year 3 Expected

Pictograms

5a. Complete the missing sections using the information below.

Transport	Number of Children
Bike	⭐⭐⭐⭐⭐⭐⭐⭐⭐⭐
Scooter	
Skateboard	
Rollerskates	
Hoverboard	⭐

Key: ⭐ = 2 children

A. 5 fewer children have a scooter than have a bike.
B. Half as many children have a skateboard as have a bike.
C. A quarter as many children have rollerskates as have a bike.

Pictograms

5b. Complete the missing sections using the information below.

Shoe	Number of Children
School Shoe	👤👤👤👤👤👤👤
Trainers	
Sandals	
Boots	👤👤
Flip Flops	

Key: 👤 = 10 children

A. 10 fewer children wear flip flops than wear boots.
B. Twice as many children wear sandals as wear flip flops.
C. Three and a half times as many children wear trainers as wear sandals.

6a. Answer the questions about the number of meals sold in a restaurant.

Meal	Meals Sold
Pizza	🔴🔴🔴🔴
Pasta	🟠🟠🟠🟠🟠◗
Chicken	🟡🟡🟡🟡🟡🟡🟡🟡
Burger	🔵🔵🔵
Salad	🟢🟢🟢🟢◗

Key:
🔴 = 1 meal
🟠 = 2 meals
🟡 = 3 meals
🔵 = 5 meals
🟢 = 10 meals

A. How many burgers were sold?

B. How many more burger meals were sold than pasta meals?

C. How many meals were sold in total?

D. How many fewer pizzas were sold than salads?

6b. Answer the questions about the number of snacks sold in school.

Snack	Number of Snacks Sold
Raisins	🟤🟤🟤🟤🟤🟤
Breadstick	🟡🟡🟡🟡🟡◗
Apple	🟢🟢🟢
Carrot	🟠🟠🟠🟠🟠🟠
Cheese	🟡🟡🟡◗

Key:
🟤 = 1 snack
🟡 = 2 snacks
🟢 = 3 snacks
🟠 = 5 snacks
🟡 = 10 snacks

A. How many cheese snacks were sold?

B. How many fewer breadsticks were sold than cheese snacks?

C. How many snacks were sold in total?

D. How many more breadsticks were sold than raisins?

Varied Fluency
Pictograms

Developing
1a. A. 4 pictures for January; B. 5 pictures for March; C. 3 pictures for May
2a. A. 8; B. 10; C. 10; D. 32

Expected
3a. A. 6 pictures for walking; B. 2 pictures for a bus; C. 4 pictures for a taxi
4a. A. 11; B. 6; C. 48; D. 7

Greater Depth
5a. A. 7.5 pictures for scooter; B. 5 pictures for skateboard; C. 2.5 pictures for rollerskates
6a. A. 15; B. 4; C. 99; D. 41

Developing
1b. A. 6 pictures for tuna; B. 8 pictures for jam; C. 5 pictures for chocolate
2b. A. 20; B. 90; C. 50; D. 180

Expected
3b. A. 3.5 pictures for art club; B. 7 pictures for puzzles club; C. 3.5 pictures for sewing club
4b. A. 30; B. 10; C. 130; D. 20

Greater Depth
5b. A. 0.5 pictures for flip flops; B. 1 picture for sandals; C. 3.5 pictures for trainers
6b. A. 35; B. 22; C. 94; D. 6