ANDREW JENNINGS WITH SARAH FARRELL

# ARITHMETIC NINJA

## FOR AGES 5–6

BLOOMSBURY EDUCATION
LONDON OXFORD NEW YORK NEW DELHI SYDNEY

# Content map for Arithmetic Ninja

| | Autumn term 1: Weeks 1–6 | Autumn term 2: Weeks 7–12 | Spring term 1: Weeks 13–18 | Spring term 2: Weeks 19–25 | Summer term 1: Weeks 26–32 | Summer term 2: Weeks 33–39 |
|---|---|---|---|---|---|---|
| **Year 1 (for ages 5-6)** | • Number bonds to 10, e.g. 9 + 1 / 1+ 9<br>• Add one- and two-digit numbers within 20 (13 + 1 / 13 + 2 / 13 + 3)<br>• Include language of 1 more<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 10 (alternate representations, e.g. 10 = __ + 4)<br>• Subtract one- and two-digit numbers within 20 (15 – 3 / 15 – 4 / 15 – 5)<br>• Include language of 1 less<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 20 (19 + 1 / 1 + 19)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 more to 50<br>• 5 + 5<br>• Half | • Number bonds to 20 (alternate representations, e.g. 20 = __ + 1)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 less to 50<br>• 5 + 5<br>• Half | • Add and subtract one- and two-digit numbers within 20 (alternate representations including answer box at the beginning AND missing number, e.g. 7 = __ – 9)<br>• Count in 10s (lots of)<br>• 10 + 10<br>• Quarter<br>• 1 more to 100 | • Mixed adding and subtracting within 20 (alternate representations) and within 30<br>• Mixed counting in 2s, 5s and 10s<br>• Quarter<br>• 1 less to 100<br>• Mixed 1 more and 1 less in different representations |
| **Year 2 (for ages 6-7)** | • Number bonds to 10 (alternate representations)<br>• Number bonds to 20 (alternate representations)<br>• Addition and subtraction within 10<br>• Count in 2s<br>• Double | • Addition and subtraction within 20<br>• Partition two-digit numbers in different ways (20 + 3 / 10 + 13)<br>• Double and half<br>• Quarter | • Add and subtract two-digit and one-digit numbers (34 + 3 / 34 + 5 / 34 + 6)<br>• Using the inverse (1 + 2 = 3 / 3 – 2 = 1)<br>• 2 times table<br>• Half / two quarters | • Add and subtract two-digit numbers and tens (34 + 10 / 34 + 20 / 34 + 30)<br>• Derive related facts to 100 (3 + 4 = 30 / 30 + 40 = 70 / 70 = 30 + 40)<br>• Thirds | • Add and subtract two two-digit numbers (56 – 22 / 56 – 23 / 56 – 24)<br>• Add three one-digit numbers (1 + 5 + 7 / 1 + 4 + 8)<br>• 5 times table | • Add and subtract two two-digit numbers (56 + __ = 79 / 79 = __ + 56)<br>• 5 and 10 times tables |
| **Year 3 (for ages 7-8)** | • Three-digit numbers add ones (456 + 2 / + 3 / + 4)<br>• Partition two-digit numbers in different ways (80 + 2 / 70 + 12)<br>• Mixed 2, 5 and 10 times tables (including halves and doubles) | • Three-digit numbers subtract ones (456 – 2 / – 3 / – 4)<br>• Partition three-digit numbers in different ways (100 + 40 + 6 / 130 + 16)<br>• 3 and 4 times tables (including quarters) | • Three-digit numbers add tens (456 + 20 / + 30 / + 40)<br>• Derive related facts (30 + 40 / 300 + 400 / 50 + 20)<br>• 8 times table<br>• Add and subtract fractions with the same denominator ( + ) | • Three-digit numbers subtract tens (456 – 20 / – 30 / – 40)<br>• Add and subtract three-digit numbers (246 – 123 / 123 + 246)<br>• Distribute (4 x 12 x 5 / 4 x 5 x 12 / 20 x 12 = 240)<br>• Mixed times tables<br>• Unit fractions of numbers linking to those times tables | • Three-digit numbers add hundreds (456 + 200 / + 300 / + 400)<br>• Add and subtract three-digit numbers (246 – __ = 132 / 456 = __ + 321)<br>• Derive related facts to 1,000<br>• Two-digit times one-digit numbers (45 x 3 / 45 x 4) | • Three-digit numbers subtract hundreds (456 – 200 / – 300 / – 400)<br>• Derive related facts to 1,000<br>• Divide one-digit numbers by ten (40 / 10 then 4 / 10)<br>• Non-unit fraction of number (e.g.) relating to times tables |
| **Year 4 (for ages 8-9)** | • 10 / 100 more / less<br>• Mixed times tables (2, 5, 10, 3, 4, 8, including double, half, quarter, etc.)<br>• Multiply three numbers<br>• Add and subtract fractions (same denominators) | • 10 / 100 / 1,000 more / less<br>• Partition four-digit numbers in different ways (3,005 + 340 / 3,300 + 45)<br>• Derive related facts to 10,000 (e.g. 60 x 2)<br>• Unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / __ = 4564 + 2323)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Three-digit times one-digit numbers<br>• Non-unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / 5737 = __ – 1234)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit times one-digit numbers<br>• Divide a one- or two-digit number by 10 and 100 | • Add and subtract decimals (tenths)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Two-digit numbers divided by one-digit numbers<br>• Add and subtract fractions (same denominators; answers bigger than 1) | • Add and subtract decimals (hundredths)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit numbers divided by one-digit numbers |
| **Year 5 (for ages 9-10)** | • 10 / 100 / 1000 more / less<br>• Partition numbers in different ways<br>• Add and subtract decimals (complements of 1, e.g. 100 – 76 = __ / 1 – 0.76 =__)<br>• All times tables, including deriving related facts | • Powers of 10 more / less<br>• Square / square root<br>• Short multiplication<br>• Derive related facts to 10,000 (including fractions)<br>• Add and subtract fractions with the same denominator (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / __ = 84,564 + 12,323)<br>• Multiply and divide by 10, 100 and 1000<br>• Derive related facts to 100,000 (including fractions)<br>• Add and subtract fractions where the denominators are multiples of same number (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / 45,737 = __ – 31,234)<br>• Long multiplication<br>• Short division (no remainders)<br>• Non-unit fractions of whole numbers<br>• Add and subtract mixed numbers | • Add and subtract decimals (up to hundredths / mix of whole and decimal)<br>• Short division<br>• Multiply simple fractions by whole numbers | • Add and subtract decimals (up to hundredths / different number of places)<br>• Find 100%, 10%, 1%<br>• Find 50%, 20%, 25%<br>• Cube / cube root<br>• Find whole from unit fraction<br>• Multiply mixed numbers by whole numbers |
| **Year 6 (for ages 10-11)** | • Mixed whole number addition and subtraction<br>• Derive related facts to 100,000<br>• Multiply and divide by 10, 100 and 1,000<br>• Add and subtract fractions with denominators that are multiples of the same number | • Mixed decimal addition and subtraction<br>• Derive related facts to 1,000,000<br>• Add and subtract fractions with different denominators<br>• Fraction of number | • Square and cube numbers<br>• BODMAS<br>• Long multiplication<br>• Multiply pairs of fractions<br>• Find whole from fraction<br>• Percentage of number | • Short division<br>• Long division<br>• Divide fractions by whole numbers<br>• Mixed fractions and percentages of numbers<br>• Fractions to decimals | • Decimal long multiplication<br>• Multiply mixed pairs of fractions | • Decimal division<br>• Divide mixed number by whole number |

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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 2 | + | 1 | = | |
| 2. | 3 | + | 1 | = | |
| 3. | 1 | + | 1 | = | |
| 4. | 2 | + | 1 | = | |
| 5. | 1 | + | 1 | = | |
| 6. | 3 | + | 3 | = | |
| 7. | 2 | + | 2 | = | |
| 8. | 1 | + | 3 | = | |
| 9. | 3 | + | 2 | = | |
| 10. | 2 | + | 1 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 3 | + | 1 | = | |
| 2. | 2 | + | 1 | = | |
| 3. | 1 | + | 2 | = | |
| 4. | 3 | + | 1 | = | |
| 5. | 3 | + | 3 | = | |
| 6. | 1 | + | 2 | = | |
| 7. | 1 | + | 1 | = | |
| 8. | 2 | + | 2 | = | |
| 9. | 3 | + | 1 | = | |
| 10. | 1 | + | 2 | = | |

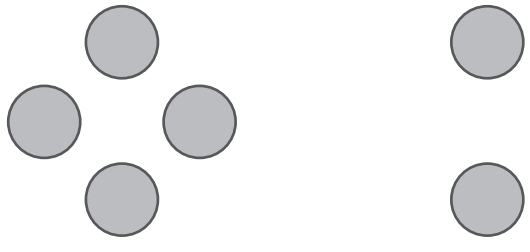
| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 3 | + | 1 | = | |
| 2. | 4 | + | 1 | = | |
| 3. | 2 | + | 1 | = | |
| 4. | 1 | + | 2 | = | |
| 5. | 2 | + | 1 | = | |
| 6. | 2 | + | 2 | = | |
| 7. | 3 | + | 1 | = | |
| 8. | 3 | – | 1 | = | |
| 9. | 2 | – | 1 | = | |
| 10. | 1 | – | 1 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 3 | + | 3 | = | |
| 2. | 3 | + | 1 | = | |
| 3. | 2 | + | 3 | = | |
| 4. | 3 | + | 1 | = | |
| 5. | 1 | + | 2 | = | |
| 6. | 2 | + | 2 | = | |
| 7. | 2 | + | 1 | = | |
| 8. | 3 | – | 2 | = | |
| 9. | 3 | – | 1 | = | |
| 10. | 3 | – | 3 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 1 | + | 2 | = | |
| 2. | 3 | + | 2 | = | |
| 3. | 2 | + | 2 | = | |
| 4. | 0 | + | 2 | = | |
| 5. | 3 | + | 1 | = | |
| 6. | 0 | + | 0 | = | |
| 7. | 3 | – | 0 | = | |
| 8. | 2 | – | 1 | = | |
| 9. | 3 | – | 1 | = | |
| 10. | 1 | – | 1 | = | |

## Ninja challenge

Cho **adds** four counters and two counters **together**. How many counters does Cho have?



# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 0 | + | | = | 10 |
| 2. | 1 | + | | = | 10 |
| 3. | 2 | + | | = | 10 |
| 4. | 3 | + | | = | 10 |
| 5. | 4 | + | | = | 10 |
| 6. | 5 | + | | = | 10 |
| 7. | 6 | + | | = | 10 |
| 8. | 7 | + | | = | 10 |
| 9. | 8 | + | | = | 10 |
| 10. | 9 | + | | = | 10 |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 10 | + | | = | 10 |
| 2. | 9 | + | | = | 10 |
| 3. | 8 | + | | = | 10 |
| 4. | 7 | + | | = | 10 |
| 5. | 6 | + | | = | 10 |
| 6. | 5 | + | | = | 10 |
| 7. | 4 | + | | = | 10 |
| 8. | 3 | + | | = | 10 |
| 9. | 2 | + | | = | 10 |
| 10. | 1 | + | | = | 10 |

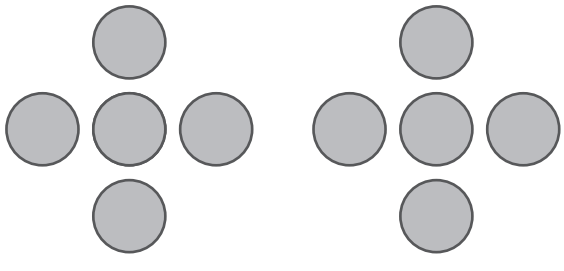
| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 0 | + | | = | 10 |
| 2. | 2 | + | | = | 10 |
| 3. | 4 | + | | = | 10 |
| 4. | 7 | + | | = | 10 |
| 5. | 6 | + | | = | 10 |
| 6. | 10 | + | | = | 10 |
| 7. | 9 | + | | = | 10 |
| 8. | 1 | + | | = | 10 |
| 9. | 3 | + | | = | 10 |
| 10. | 5 | + | | = | 10 |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 6 | + | | = | 10 |
| 2. | 9 | + | | = | 10 |
| 3. | 2 | + | | = | 10 |
| 4. | 1 | + | | = | 10 |
| 5. | 3 | + | | = | 10 |
| 6. | 5 | + | | = | 10 |
| 7. | 4 | + | | = | 10 |
| 8. | 10 | + | | = | 10 |
| 9. | 7 | + | | = | 10 |
| 10. | 0 | + | | = | 10 |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 1 | + | | = | 10 |
| 2. | 9 | + | | = | 10 |
| 3. | 3 | + | | = | 10 |
| 4. | 10 | + | | = | 10 |
| 5. | 6 | + | | = | 10 |
| 6. | 0 | + | | = | 10 |
| 7. | 4 | + | | = | 10 |
| 8. | 7 | + | | = | 10 |
| 9. | 8 | + | | = | 10 |
| 10. | 5 | + | | = | 10 |

## Ninja challenge

Jon and Sam have five counters **each**. How many counters do they have **altogether**?





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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 9 | + | 4 | = | |
| 2. | 8 | plus | 6 | = | |
| 3. | 9 | + | 5 | = | |
| 4. | | = | 9 | + | 4 |
| 5. | 15 | – | six | = | |
| 6. | | = | 7 | + | 4 |
| 7. | 15 | subtract | 6 | = | |
| 8. | 14 | – | 7 | = | |
| 9. | | = | four | + | 7 |
| 10. | 15 | minus | 8 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 8 | + | 6 | = | |
| 2. | 9 | plus | 5 | = | |
| 3. | 9 | + | 4 | = | |
| 4. | 15 | = | 8 | + | |
| 5. | 13 | – | four | = | |
| 6. | | = | 6 | + | 8 |
| 7. | 11 | subtract | 6 | = | |
| 8. | 12 | – | 5 | = | |
| 9. | | = | five | + | 8 |
| 10. | 15 | minus | 8 | = | |

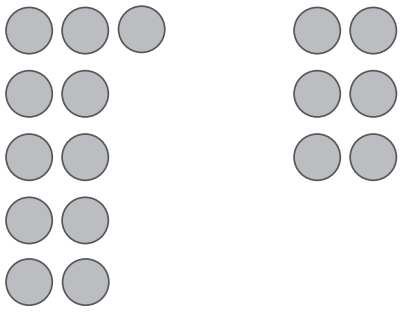
| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 6 | + | 4 | = | |
| 2. | 6 | plus | 6 | = | |
| 3. | 5 | + | 6 | = | |
| 4. | 12 | = | 6 | + | |
| 5. | 12 | – | six | = | |
| 6. | | = | 6 | + | 4 |
| 7. | 13 | subtract | 6 | = | |
| 8. | 12 | – | 7 | = | |
| 9. | | = | nine | + | 4 |
| 10. | 11 | minus | 8 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 5 | + | 6 | = | |
| 2. | 5 | plus | 7 | = | |
| 3. | 5 | + | 8 | = | |
| 4. | | = | 9 | + | 5 |
| 5. | 15 | – | eight | = | |
| 6. | | = | 2 | + | 9 |
| 7. | 12 | subtract | 11 | = | |
| 8. | 10 | – | 7 | = | |
| 9. | | = | nine | + | 4 |
| 10. | 10 | minus | 8 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 6 | + | 6 | = | |
| 2. | 5 | plus | 5 | = | |
| 3. | 5 | + | 5 | = | |
| 4. | | = | 7 | + | 7 |
| 5. | 16 | – | eight | = | |
| 6. | | = | 6 | + | 6 |
| 7. | 12 | subtract | 6 | = | |
| 8. | 10 | – | 5 | = | |
| 9. | | = | seven | + | 7 |
| 10. | 12 | minus | 6 | = | |

## Ninja challenge

Cho has eleven counters. She then collects five **more** counters. How many counters does Cho have in **total**?



ANDREW JENNINGS WITH SARAH FARRELL

# ARITHMETIC NINJA

## FOR AGES 6–7

BLOOMSBURY EDUCATION
LONDON OXFORD NEW YORK NEW DELHI SYDNEY

# Content map for Arithmetic Ninja

| | Autumn term 1: Weeks 1–6 | Autumn term 2: Weeks 7–12 | Spring term 1: Weeks 13–18 | Spring term 2: Weeks 19–25 | Summer term 1: Weeks 26–32 | Summer term 2: Weeks 33–39 |
|---|---|---|---|---|---|---|
| **Year 1 (for ages 5-6)** | • Number bonds to 10, e.g. 9 + 1 / 1+ 9<br>• Add one- and two-digit numbers within 20 (13 + 1 / 13 + 2 / 13 + 3)<br>• Include language of 1 more<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 10 (alternate representations, e.g. 10 = __ + 4)<br>• Subtract one- and two-digit numbers within 20 (15 – 3 / 15 – 4 / 15 – 5)<br>• Include language of 1 less<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 20 (19 + 1 / 1 + 19)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 more to 50<br>• 5 + 5<br>• Half | • Number bonds to 20 (alternate representations, e.g. 20 = __ + 1)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 less to 50<br>• 5 + 5<br>• Half | • Add and subtract one- and two-digit numbers within 20 (alternate representations including answer box at the beginning AND missing number, e.g. 7 = __ – 9)<br>• Count in 10s (lots of)<br>• 10 + 10<br>• Quarter<br>• 1 more to 100 | • Mixed adding and subtracting within 20 (alternate representations) and within 30<br>• Mixed counting in 2s, 5s and 10s<br>• Quarter<br>• 1 less to 100<br>• Mixed 1 more and 1 less in different representations |
| **Year 2 (for ages 6-7)** | • Number bonds to 10 (alternate representations)<br>• Number bonds to 20 (alternate representations)<br>• Addition and subtraction within 10<br>• Count in 2s<br>• Double | • Addition and subtraction within 20<br>• Partition two-digit numbers in different ways (20 + 3 / 10 + 13)<br>• Double and half<br>• Quarter | • Add and subtract two-digit and one-digit numbers (34 + 3 / 34 + 5 / 34 + 6)<br>• Using the inverse (1 + 2 = 3 / 3 – 2 = 1)<br>• 2 times table<br>• Half / two quarters | • Add and subtract two-digit numbers and tens (34 + 10 / 34 + 20 / 34 + 30)<br>• Derive related facts to 100 (3 + 4 = 30 / 30 + 40 = 70 / 70 = 30 + 40)<br>• Thirds | • Add and subtract two two-digit numbers (56 – 22 / 56 – 23 / 56 – 24)<br>• Add three one-digit numbers (1 + 5 + 7 / 1 + 4 + 8)<br>• 5 times table | • Add and subtract two two-digit numbers (56 + __ = 79 / 79 = __ + 56)<br>• 5 and 10 times tables |
| **Year 3 (for ages 7-8)** | • Three-digit numbers add ones (456 + 2 / + 3 / + 4)<br>• Partition two-digit numbers in different ways (80 + 2 / 70 + 12)<br>• Mixed 2, 5 and 10 times tables (including halves and doubles) | • Three-digit numbers subtract ones (456 – 2 / – 3 / – 4)<br>• Partition three-digit numbers in different ways (100 + 40 + 6 / 130 + 16)<br>• 3 and 4 times tables (including quarters) | • Three-digit numbers add tens (456 + 20 / + 30 / + 40)<br>• Derive related facts (30 + 40 / 300 + 400 / 50 + 20)<br>• 8 times table<br>• Add and subtract fractions with the same denominator ( + ) | • Three-digit numbers subtract tens (456 – 20 / – 30 / – 40)<br>• Add and subtract three-digit numbers (246 – 123 / 123 + 246)<br>• Distribute (4 x 12 x 5 / 4 x 5 x 12 / 20 x 12 = 240)<br>• Mixed times tables<br>• Unit fractions of numbers linking to those times tables | • Three-digit numbers add hundreds (456 + 200 / + 300 / + 400)<br>• Add and subtract three-digit numbers (246 – __ = 132 / 456 = __ + 321)<br>• Derive related facts to 1,000<br>• Two-digit times one-digit numbers (45 x 3 / 45 x 4) | • Three-digit numbers subtract hundreds (456 – 200 / – 300 / – 400)<br>• Derive related facts to 1,000<br>• Divide one-digit numbers by ten (40 / 10 then 4 / 10)<br>• Non-unit fraction of number (e.g.) relating to times tables |
| **Year 4 (for ages 8-9)** | • 10 / 100 more / less<br>• Mixed times tables (2, 5, 10, 3, 4, 8, including double, half, quarter, etc.)<br>• Multiply three numbers<br>• Add and subtract fractions (same denominators) | • 10 / 100 / 1,000 more / less<br>• Partition four-digit numbers in different ways (3,005 + 340 / 3,300 + 45)<br>• Derive related facts to 10,000 (e.g. 60 x 2)<br>• Unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / __ = 4564 + 2323)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Three-digit times one-digit numbers<br>• Non-unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / 5737 = __ – 1234)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit times one-digit numbers<br>• Divide a one- or two-digit number by 10 and 100 | • Add and subtract decimals (tenths)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Two-digit numbers divided by one-digit numbers<br>• Add and subtract fractions (same denominators; answers bigger than 1) | • Add and subtract decimals (hundredths)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit numbers divided by one-digit numbers |
| **Year 5 (for ages 9-10)** | • 10 / 100 / 1000 more / less<br>• Partition numbers in different ways<br>• Add and subtract decimals (complements of 1, e.g. 100 – 76 = __ / 1 – 0.76 =__)<br>• All times tables, including deriving related facts | • Powers of 10 more / less<br>• Square / square root<br>• Short multiplication<br>• Derive related facts to 10,000 (including fractions)<br>• Add and subtract fractions with the same denominator (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / __ = 84,564 + 12,323)<br>• Multiply and divide by 10, 100 and 1000<br>• Derive related facts to 100,000 (including fractions)<br>• Add and subtract fractions where the denominators are multiples of same number (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / 45,737 = __ – 31,234)<br>• Long multiplication<br>• Short division (no remainders)<br>• Non-unit fractions of whole numbers<br>• Add and subtract mixed numbers | • Add and subtract decimals (up to hundredths / mix of whole and decimal)<br>• Short division<br>• Multiply simple fractions by whole numbers | • Add and subtract decimals (up to hundredths / different number of places)<br>• Find 100%, 10%, 1%<br>• Find 50%, 20%, 25%<br>• Cube / cube root<br>• Find whole from unit fraction<br>• Multiply mixed numbers by whole numbers |
| **Year 6 (for ages 10-11)** | • Mixed whole number addition and subtraction<br>• Derive related facts to 100,000<br>• Multiply and divide by 10, 100 and 1,000<br>• Add and subtract fractions with denominators that are multiples of the same number | • Mixed decimal addition and subtraction<br>• Derive related facts to 1,000,000<br>• Add and subtract fractions with different denominators<br>• Fraction of number | • Square and cube numbers<br>• BODMAS<br>• Long multiplication<br>• Multiply pairs of fractions<br>• Find whole from fraction<br>• Percentage of number | • Short division<br>• Long division<br>• Divide fractions by whole numbers<br>• Mixed fractions and percentages of numbers<br>• Fractions to decimals | • Decimal long multiplication<br>• Multiply mixed pairs of fractions | • Decimal division<br>• Divide mixed number by whole number |

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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 1 | + | 9 | = | |
| 2. | 3 | + | 7 | = | |
| 3. | 2 | add | 8 | = | |
| 4. | 4 | + | 6 | equals | |
| 5. | 6 | + | 4 | = | |
| 6. | 5 | plus | 5 | = | |
| 7. | 0 | + | 10 | equals | |
| 8. | 8 | + | 2 | = | |
| 9. | 7 | add | 3 | = | |
| 10. | 9 | + | 1 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 1 | + | 7 | = | |
| 2. | 3 | + | 6 | = | |
| 3. | 2 | add | 8 | = | |
| 4. | 4 | + | 4 | equals | |
| 5. | 6 | + | 3 | = | |
| 6. | 5 | plus | 4 | = | |
| 7. | 0 | + | 8 | equals | |
| 8. | 8 | + | 1 | = | |
| 9. | 7 | add | 2 | = | |
| 10. | 5 | + | 4 | = | |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 3 | + | 7 | = | |
| 2. | 6 | + | 3 | = | |
| 3. | 5 | add | 3 | = | |
| 4. | 7 | + | 3 | equals | |
| 5. | 9 | + | 0 | = | |
| 6. | 0 | plus | 7 | = | |
| 7. | 1 | + | 8 | equals | |
| 8. | 4 | + | 5 | = | |
| 9. | 3 | add | 5 | = | |
| 10. | 2 | + | 7 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 3 | + | 5 | = | |
| 2. | 6 | + | 3 | = | |
| 3. | 5 | add | 2 | = | |
| 4. | 7 | + | 2 | equals | |
| 5. | 4 | + | 6 | = | |
| 6. | 0 | plus | 6 | = | |
| 7. | 1 | + | 5 | equals | |
| 8. | 4 | + | 3 | = | |
| 9. | 3 | add | 4 | = | |
| 10. | 2 | + | 5 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 4 | + | 4 | = | |
| 2. | 5 | + | 4 | = | |
| 3. | 4 | add | 3 | = | |
| 4. | 6 | + | 3 | equals | |
| 5. | 5 | + | 5 | = | |
| 6. | 3 | plus | 3 | = | |
| 7. | 5 | + | 1 | equals | |
| 8. | 1 | + | 6 | = | |
| 9. | 3 | add | 4 | = | |
| 10. | 6 | + | 1 | = | |

## Ninja challenge

Cho has 4 books and Sam has 4 books. How many books do Cho and Sam have **altogether**?

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# WEEK 1

## Monday

| | | | | | |
|---|---|---|---|---|---|
| 1. | | + | 9 | = | 10 |
| 2. | 10 | = | 1 | + | |
| 3. | 10 | = | 2 | + | |
| 4. | 8 | + | 2 | = | |
| 5. | 4 | lots of | 2 | is equal to | |
| 6. | double | 3 | is equal | to | |
| 7. | 6 | is equal to | | lots of | 2 |
| 8. | 8 | is equal to | 4 | lots of | |
| 9. | double | | is equal | to | 8 |
| 10. | | equal groups of | 2 | is equal to | 6 |

## Tuesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | | = | 4 | + | 6 |
| 2. | 6 | + | | is equal to | 10 |
| 3. | 7 | + | | is equal to | 10 |
| 4. | | + | 2 | = | 10 |
| 5. | 6 | lots of | 2 | is equal to | |
| 6. | | x | 2 | = | 12 |
| 7. | 12 | is equal to | | x | 2 |
| 8. | 14 | is equal to | | x | 2 |
| 9. | 7 | groups of | 2 | is equal to | |
| 10. | double | seven | is equal | to | |

## Wednesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 4 | + | 6 | = | |
| 2. | 10 | + | | = | 10 |
| 3. | 10 | = | | + | 1 |
| 4. | 9 | = | 8 | + | |
| 5. | 5 | + | | = | 10 |
| 6. | two groups of | 5 | is equal | to | |
| 7. | 10 | is equal | to | double | |
| 8. | 5 | x | 2 | = | |
| 9. | | x | 2 | = | 12 |
| 10. | | = | 6 | x | 2 |

## Thursday

| | | | | | |
|---|---|---|---|---|---|
| 1. | | + | 3 | = | 10 |
| 2. | 3 | + | 7 | is equal to | |
| 3. | the sum of | | and 3 | is | 10 |
| 4. | 10 | = | | + | 4 |
| 5. | | = | 6 | + | 3 |
| 6. | double | 8 | is equal | to | |
| 7. | 16 | = | | x | 2 |
| 8. | | = | 9 | x | 2 |
| 9. | 9 | lots of | 2 | = | |
| 10. | double | | is equal | to | 16 |

## Friday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 9 | + | 1 | = | |
| 2. | | + | 9 | is equal to | 10 |
| 3. | 10 | is equal to | | add | 1 |
| 4. | | is equal to | 9 | add | 2 |
| 5. | 2 | + | | = | 11 |
| 6. | double | 9 | is equal | to | |
| 7. | 18 | is equal to | 2 | groups of | |
| 8. | | x | 2 | = | 18 |
| 9. | 10 | x | 2 | = | |
| 10. | 20 | is equal to | | lots of | 2 |

## Ninja challenge

Cho says that **double** 3 is 5. Is Cho correct? Explain why.



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# WEEK 1

## Monday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 34 | + | two | = | |
| 2. | 45 | add | 3 | equals | |
| 3. | 36 | + | 10 | = | |
| 4. | five | times | 2 | = | |
| 5. | three | lots of | 10 | = | |
| 6. | 30 | + | 40 | equals | |
| 7. | double 20 | + | double 20 | = | |
| 8. | 37 | minus | 10 | = | |
| 9. | 80 | – | 10 | equals | |
| 10. | 4 | groups of | 3 | = | |

## Tuesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 37 | + | three | = | |
| 2. | 42 | add | 3 | equals | |
| 3. | 26 | + | 10 | = | |
| 4. | four | times | 2 | = | |
| 5. | five | lots of | 10 | = | |
| 6. | 20 | + | 60 | equals | |
| 7. | double 10 | + | double 20 | = | |
| 8. | 46 | minus | 10 | = | |
| 9. | 50 | – | 20 | equals | |
| 10. | five | groups of | 3 | = | |

## Wednesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 34 | + | | = | 36 |
| 2. | 45 | add | | equals | 48 |
| 3. | 36 | + | | = | 46 |
| 4. | | times | 2 | = | 10 |
| 5. | | lots of | 10 | = | 30 |
| 6. | 30 | + | | equals | 70 |
| 7. | double 20 | + | double 20 | = | |
| 8. | 37 | minus | | = | 27 |
| 9. | | – | 10 | equals | 70 |
| 10. | 4 | groups of | | = | 12 |

## Thursday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 37 | + | | = | 40 |
| 2. | 42 | add | | equals | 45 |
| 3. | | + | 10 | = | 36 |
| 4. | four | times | | = | 8 |
| 5. | five | lots of | | = | 50 |
| 6. | | + | 60 | equals | 80 |
| 7. | double 10 | + | double 20 | = | |
| 8. | 46 | minus | | = | 36 |
| 9. | 50 | – | | equals | 30 |
| 10. | five | groups of | | = | 15 |

## Friday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 56 | + | two | = | |
| 2. | 45 | add | | equals | 48 |
| 3. | | + | 10 | = | 39 |
| 4. | eight | times | | = | 16 |
| 5. | nine | lots of | 10 | = | |
| 6. | 30 | + | | equals | 90 |
| 7. | double 10 | + | double 5 | = | |
| 8. | | minus | 10 | = | 46 |
| 9. | | – | 30 | equals | 20 |
| 10. | six | groups of | | = | 18 |

## Ninja challenge

Sam says that **double** 20 **plus double** 20 is **greater than** 60. Is Sam correct? Explain your answer.

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ANDREW JENNINGS WITH SARAH FARRELL

# ARITHMETIC NINJA

## FOR AGES 7–8

BLOOMSBURY EDUCATION
LONDON OXFORD NEW YORK NEW DELHI SYDNEY

# Content map for Arithmetic Ninja

| | Autumn term 1: Weeks 1–6 | Autumn term 2: Weeks 7–12 | Spring term 1: Weeks 13–18 | Spring term 2: Weeks 19–25 | Summer term 1: Weeks 26–32 | Summer term 2: Weeks 33–39 |
|---|---|---|---|---|---|---|
| **Year 1 (for ages 5-6)** | • Number bonds to 10, e.g. 9 + 1 / 1+ 9<br>• Add one- and two-digit numbers within 20 (13 + 1 / 13 + 2 / 13 + 3)<br>• Include language of 1 more<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 10 (alternate representations, e.g. 10 = __ + 4)<br>• Subtract one- and two-digit numbers within 20 (15 – 3 / 15 – 4 / 15 – 5)<br>• Include language of 1 less<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 20 (19 + 1 / 1 + 19)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 more to 50<br>• 5 + 5<br>• Half | • Number bonds to 20 (alternate representations, e.g. 20 = __ + 1)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 less to 50<br>• 5 + 5<br>• Half | • Add and subtract one- and two-digit numbers within 20 (alternate representations including answer box at the beginning AND missing number, e.g. 7 = __ – 9)<br>• Count in 10s (lots of)<br>• 10 + 10<br>• Quarter<br>• 1 more to 100 | • Mixed adding and subtracting within 20 (alternate representations) and within 30<br>• Mixed counting in 2s, 5s and 10s<br>• Quarter<br>• 1 less to 100<br>• Mixed 1 more and 1 less in different representations |
| **Year 2 (for ages 6-7)** | • Number bonds to 10 (alternate representations)<br>• Number bonds to 20 (alternate representations)<br>• Addition and subtraction within 10<br>• Count in 2s<br>• Double | • Addition and subtraction within 20<br>• Partition two-digit numbers in different ways (20 + 3 / 10 + 13)<br>• Double and half<br>• Quarter | • Add and subtract two-digit and one-digit numbers (34 + 3 / 34 + 5 / 34 + 6)<br>• Using the inverse (1 + 2 = 3 / 3 – 2 = 1)<br>• 2 times table<br>• Half / two quarters | • Add and subtract two-digit numbers and tens (34 + 10 / 34 + 20 / 34 + 30)<br>• Derive related facts to 100 (3 + 4 = 30 / 30 + 40 = 70 / 70 = 30 + 40)<br>• Thirds | • Add and subtract two two-digit numbers (56 – 22 / 56 – 23 / 56 – 24)<br>• Add three one-digit numbers (1 + 5 + 7 / 1 + 4 + 8)<br>• 5 times table | • Add and subtract two two-digit numbers (56 + __ = 79 / 79 = __ + 56)<br>• 5 and 10 times tables |
| **Year 3 (for ages 7-8)** | • Three-digit numbers add ones (456 + 2 / + 3 / + 4)<br>• Partition two-digit numbers in different ways (80 + 2 / 70 + 12)<br>• Mixed 2, 5 and 10 times tables (including halves and doubles) | • Three-digit numbers subtract ones (456 – 2 / – 3 / – 4)<br>• Partition three-digit numbers in different ways (100 + 40 + 6 / 130 + 16)<br>• 3 and 4 times tables (including quarters) | • Three-digit numbers add tens (456 + 20 / + 30 / + 40)<br>• Derive related facts (30 + 40 / 300 + 400 / 50 + 20)<br>• 8 times table<br>• Add and subtract fractions with the same denominator ( + ) | • Three-digit numbers subtract tens (456 – 20 / – 30 / – 40)<br>• Add and subtract three-digit numbers (246 – 123 / 123 + 246)<br>• Distribute (4 x 12 x 5 / 4 x 5 x 12 / 20 x 12 = 240)<br>• Mixed times tables<br>• Unit fractions of numbers linking to those times tables | • Three-digit numbers add hundreds (456 + 200 / + 300 / + 400)<br>• Add and subtract three-digit numbers (246 – __ = 132 / 456 = __ + 321)<br>• Derive related facts to 1,000<br>• Two-digit times one-digit numbers (45 x 3 / 45 x 4) | • Three-digit numbers subtract hundreds (456 – 200 / – 300 / – 400)<br>• Derive related facts to 1,000<br>• Divide one-digit numbers by ten (40 / 10 then 4 / 10)<br>• Non-unit fraction of number (e.g.) relating to times tables |
| **Year 4 (for ages 8-9)** | • 10 / 100 more / less<br>• Mixed times tables (2, 5, 10, 3, 4, 8, including double, half, quarter, etc.)<br>• Multiply three numbers<br>• Add and subtract fractions (same denominators) | • 10 / 100 / 1,000 more / less<br>• Partition four-digit numbers in different ways (3,005 + 340 / 3,300 + 45)<br>• Derive related facts to 10,000 (e.g. 60 x 2)<br>• Unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / __ = 4564 + 2323)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Three-digit times one-digit numbers<br>• Non-unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / 5737 = __ – 1234)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit times one-digit numbers<br>• Divide a one- or two-digit number by 10 and 100 | • Add and subtract decimals (tenths)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Two-digit numbers divided by one-digit numbers<br>• Add and subtract fractions (same denominators; answers bigger than 1) | • Add and subtract decimals (hundredths)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit numbers divided by one-digit numbers |
| **Year 5 (for ages 9-10)** | • 10 / 100 / 1000 more / less<br>• Partition numbers in different ways<br>• Add and subtract decimals (complements of 1, e.g. 100 – 76 = __ / 1 – 0.76 =__)<br>• All times tables, including deriving related facts | • Powers of 10 more / less<br>• Square / square root<br>• Short multiplication<br>• Derive related facts to 10,000 (including fractions)<br>• Add and subtract fractions with the same denominator (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / __ = 84,564 + 12,323)<br>• Multiply and divide by 10, 100 and 1000<br>• Derive related facts to 100,000 (including fractions)<br>• Add and subtract fractions where the denominators are multiples of same number (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / 45,737 = __ – 31,234)<br>• Long multiplication<br>• Short division (no remainders)<br>• Non-unit fractions of whole numbers<br>• Add and subtract mixed numbers | • Add and subtract decimals (up to hundredths / mix of whole and decimal)<br>• Short division<br>• Multiply simple fractions by whole numbers | • Add and subtract decimals (up to hundredths / different number of places)<br>• Find 100%, 10%, 1%<br>• Find 50%, 20%, 25%<br>• Cube / cube root<br>• Find whole from unit fraction<br>• Multiply mixed numbers by whole numbers |
| **Year 6 (for ages 10-11)** | • Mixed whole number addition and subtraction<br>• Derive related facts to 100,000<br>• Multiply and divide by 10, 100 and 1,000<br>• Add and subtract fractions with denominators that are multiples of the same number | • Mixed decimal addition and subtraction<br>• Derive related facts to 1,000,000<br>• Add and subtract fractions with different denominators<br>• Fraction of number | • Square and cube numbers<br>• BODMAS<br>• Long multiplication<br>• Multiply pairs of fractions<br>• Find whole from fraction<br>• Percentage of number | • Short division<br>• Long division<br>• Divide fractions by whole numbers<br>• Mixed fractions and percentages of numbers<br>• Fractions to decimals | • Decimal long multiplication<br>• Multiply mixed pairs of fractions | • Decimal division<br>• Divide mixed number by whole number |

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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 34 | subtract | 10 | = | |
| 2. | 23 | minus | 10 | = | |
| 3. | 17 | – | 10 | = | |
| 4. | 18 | add | 10 | = | |
| 5. | 27 | plus | 10 | = | |
| 6. | 32 | + | 16 | = | |
| 7. | 25 | + | 23 | = | |
| 8. | 34 | – | 15 | = | |
| 9. | 25 | – | 21 | = | |
| 10. | 5+3+2 | + | 5+3+1 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 45 | subtract | 10 | = | |
| 2. | 24 | minus | 10 | = | |
| 3. | 54 | – | 10 | = | |
| 4. | 34 | add | 10 | = | |
| 5. | 12 | plus | 10 | = | |
| 6. | 37 | + | 25 | = | |
| 7. | 32 | + | 24 | = | |
| 8. | 23 | – | 13 | = | |
| 9. | 45 | – | 23 | = | |
| 10. | 1+3+2 | + | 5+3+2 | = | |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 53 | subtract | 10 | = | |
| 2. | 43 | minus | 10 | = | |
| 3. | 29 | – | 10 | = | |
| 4. | 36 | add | 10 | = | |
| 5. | 29 | plus | 10 | = | |
| 6. | 35 | + | 25 | = | |
| 7. | 37 | + | 24 | = | |
| 8. | 34 | – | 13 | = | |
| 9. | 43 | – | 23 | = | |
| 10. | 1+3+5 | + | 5+3+4 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 43 | subtract | 10 | = | |
| 2. | 28 | minus | 10 | = | |
| 3. | 46 | – | 10 | = | |
| 4. | 34 | add | 10 | = | |
| 5. | 54 | plus | 10 | = | |
| 6. | 46 | + | 25 | = | |
| 7. | 53 | + | 24 | = | |
| 8. | 67 | – | 13 | = | |
| 9. | 65 | – | 23 | = | |
| 10. | 1+2+4 | + | 5+2+2 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 54 | subtract | 10 | = | |
| 2. | 63 | minus | 10 | = | |
| 3. | 72 | – | 10 | = | |
| 4. | 26 | add | 10 | = | |
| 5. | 38 | plus | 10 | = | |
| 6. | 37 | + | 25 | = | |
| 7. | 54 | + | 24 | = | |
| 8. | 73 | – | 13 | = | |
| 9. | 59 | – | 23 | = | |
| 10. | 1+5+4 | + | 5+10+2 | = | |

## Ninja challenge

Cho has 45 marbles. Tom says he has 21 marbles **less** than Cho. **How many** marbles does Tom have?

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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 694 | + | 3 | = | |
| 2. | 794 | + | 3 | = | |
| 3. | | = | 793 | + | 3 |
| 4. | 70 + | 6 | = | 60 + | |
| 5. | 50 + | 34 | = | 80 + | |
| 6. | | groups of | 2 | is equal to | 12 |
| 7. | 7 | lots of | 2 | is equal to | |
| 8. | 14 | ÷ | 2 | = | |
| 9. | 8 | x | 2 | = | |
| 10. | | = | 16 | ÷ | 2 |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 342 | + | 6 | = | |
| 2. | 642 | + | 6 | = | |
| 3. | | = | 642 | + | 7 |
| 4. | 20 + | 24 | = | 40 + | |
| 5. | 50 + | 9 | = | 20 + | |
| 6. | | groups of | 2 | is equal to | 16 |
| 7. | 9 | lots of | 2 | is equal to | |
| 8. | 18 | ÷ | 2 | = | |
| 9. | 10 | x | 2 | = | |
| 10. | | = | 20 | ÷ | 2 |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 285 | + | 3 | = | |
| 2. | 485 | + | 3 | = | |
| 3. | | = | 485 | + | 2 |
| 4. | 50 + | 48 | = | 90 + | |
| 5. | 80 + | 6 | = | 20 + | |
| 6. | | groups of | 2 | is equal to | 18 |
| 7. | 10 | lots of | 2 | is equal to | |
| 8. | 20 | ÷ | 2 | = | |
| 9. | 11 | x | 2 | = | |
| 10. | | = | 22 | ÷ | 2 |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 374 | + | 5 | = | |
| 2. | 474 | + | 5 | = | |
| 3. | | = | 475 | + | 3 |
| 4. | 70 + | 12 | = | 80 + | |
| 5. | 70 + | 5 | = | 20 + | |
| 6. | | groups of | 2 | is equal to | 18 |
| 7. | 10 | lots of | 2 | is equal to | |
| 8. | 22 | ÷ | 2 | = | |
| 9. | 12 | x | 2 | = | |
| 10. | | = | 24 | ÷ | 2 |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 857 | + | 2 | = | |
| 2. | 957 | + | 2 | = | |
| 3. | | = | 952 | + | 7 |
| 4. | 30 + | 64 | = | 90 + | |
| 5. | 80 + | 7 | = | 40 + | |
| 6. | | groups of | 2 | is equal to | 24 |
| 7. | double | 12 | is equal | to | |
| 8. | half of | 12 | is equal | to | |
| 9. | | = | 12 | x | 2 |
| 10. | | = | 12 | ÷ | 2 |

## Ninja challenge

Sam says that 6 **groups** of 2 is **equal** to 12. Is Sam correct? Explain why.

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# WEEK 1

## Monday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 574 | + | | = | 583 |
| 2. | 736 | + | | = | 756 |
| 3. | 637 | + | 67 | = | |
| 4. | 264 | – | | = | 255 |
| 5. | 374 | – | | = | 344 |
| 6. | 479 | – | 57 | = | |
| 7. | | x | 3 | = | 9 |
| 8. | | x | 4 | = | 16 |
| 9. | | ÷ | 3 | = | 5 |
| 10. | | ÷ | 4 | = | 4 |

## Tuesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 463 | + | | = | 472 |
| 2. | 263 | + | | = | 283 |
| 3. | 631 | + | 67 | = | |
| 4. | 117 | – | | = | 108 |
| 5. | 375 | – | | = | 345 |
| 6. | 374 | – | 57 | = | |
| 7. | | x | 3 | = | 18 |
| 8. | | x | 4 | = | 8 |
| 9. | | ÷ | 3 | = | 6 |
| 10. | | ÷ | 4 | = | 3 |

## Wednesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 263 | + | | = | 270 |
| 2. | 847 | + | | = | 887 |
| 3. | 147 | + | 34 | = | |
| 4. | 126 | – | | = | 117 |
| 5. | 354 | – | | = | 314 |
| 6. | 364 | – | 34 | = | |
| 7. | | x | 3 | = | 27 |
| 8. | | x | 4 | = | 20 |
| 9. | | ÷ | 3 | = | 6 |
| 10. | | ÷ | 4 | = | 6 |

## Thursday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 219 | + | | = | 227 |
| 2. | 284 | + | | = | 314 |
| 3. | 473 | + | 37 | = | |
| 4. | 179 | – | | = | 172 |
| 5. | 319 | – | | = | 299 |
| 6. | 268 | – | 34 | = | |
| 7. | | x | 3 | = | 21 |
| 8. | | x | 4 | = | 24 |
| 9. | | ÷ | 3 | = | 9 |
| 10. | | ÷ | 4 | = | 7 |

## Friday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 344 | + | | = | 353 |
| 2. | 204 | + | | = | 254 |
| 3. | 459 | + | 24 | = | |
| 4. | 438 | – | | = | 430 |
| 5. | 442 | – | | = | 392 |
| 6. | 288 | – | 67 | = | |
| 7. | | x | 3 | = | 27 |
| 8. | | x | 4 | = | 36 |
| 9. | | ÷ | 3 | = | 6 |
| 10. | | ÷ | 4 | = | 12 |

## Ninja challenge

Cho says that 756 is 20 **more than** 745. Is Cho correct? Explain why.

# WEEK 2

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 65 | take away | 10 | = | |
| 2. | 74 | – | 20 | = | |
| 3. | 25 | add | 10 | = | |
| 4. | 56 | + | 20 | = | |
| 5. | 63 | + | 25 | = | |
| 6. | 69 | – | 34 | = | |
| 7. | 4 | lots of | 3 | = | |
| 8. | 6 | groups of | 5 | = | |
| 9. | double | 6 | | = | |
| 10. | a quarter | of | 12 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 59 | subtract | 10 | = | |
| 2. | 39 | – | 20 | = | |
| 3. | 45 | add | 10 | = | |
| 4. | 75 | + | 20 | = | |
| 5. | 37 | + | 25 | = | |
| 6. | 61 | – | 34 | = | |
| 7. | 7 | lots of | 3 | = | |
| 8. | 5 | groups of | 5 | = | |
| 9. | double | 7 | | = | |
| 10. | a quarter | of | 4 | = | |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 51 | subtract | 10 | = | |
| 2. | 24 | – | 20 | = | |
| 3. | 71 | add | 10 | = | |
| 4. | 48 | + | 20 | = | |
| 5. | 46 | + | 36 | = | |
| 6. | 73 | – | 34 | = | |
| 7. | 9 | lots of | 3 | = | |
| 8. | 8 | groups of | 5 | = | |
| 9. | double | 9 | | = | |
| 10. | a quarter | of | 8 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 84 | subtract | 10 | = | |
| 2. | 71 | – | 20 | = | |
| 3. | 17 | add | 10 | = | |
| 4. | 28 | + | 20 | = | |
| 5. | 39 | + | 17 | = | |
| 6. | 93 | – | 47 | = | |
| 7. | 6 | lots of | 3 | = | |
| 8. | 9 | groups of | 5 | = | |
| 9. | double | 8 | | = | |
| 10. | a quarter | of | 40 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 93 | subtract | 10 | = | |
| 2. | 89 | – | 20 | = | |
| 3. | 46 | add | 10 | = | |
| 4. | 64 | + | 20 | = | |
| 5. | 35 | + | 17 | = | |
| 6. | 64 | – | 47 | = | |
| 7. | 7 | lots of | 3 | = | |
| 8. | 11 | groups of | 5 | = | |
| 9. | double | 11 | | = | |
| 10. | a quarter | of | 12 | = | |

## Ninja challenge

Sam has 6 **groups** of 5 counters. He tells Iko that he has 40 counters. Is Sam correct?

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ANDREW JENNINGS WITH SARAH FARRELL

# ARITHMETIC NINJA

## FOR AGES 8–9

BLOOMSBURY EDUCATION
LONDON OXFORD NEW YORK NEW DELHI SYDNEY

# Content map for Arithmetic Ninja

| | Autumn term 1: Weeks 1–6 | Autumn term 2: Weeks 7–12 | Spring term 1: Weeks 13–18 | Spring term 2: Weeks 19–25 | Summer term 1: Weeks 26–32 | Summer term 2: Weeks 33–39 |
|---|---|---|---|---|---|---|
| **Year 1 (for ages 5-6)** | • Number bonds to 10, e.g. 9 + 1 / 1+ 9<br>• Add one- and two-digit numbers within 20 (13 + 1 / 13 + 2 / 13 + 3)<br>• Include language of 1 more<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 10 (alternate representations, e.g. 10 = __ + 4)<br>• Subtract one- and two-digit numbers within 20 (15 – 3 / 15 – 4 / 15 – 5)<br>• Include language of 1 less<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 20 (19 + 1 / 1 + 19)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 more to 50<br>• 5 + 5<br>• Half | • Number bonds to 20 (alternate representations, e.g. 20 = __ + 1)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 less to 50<br>• 5 + 5<br>• Half | • Add and subtract one- and two-digit numbers within 20 (alternate representations including answer box at the beginning AND missing number, e.g. 7 = __ – 9)<br>• Count in 10s (lots of)<br>• 10 + 10<br>• Quarter<br>• 1 more to 100 | • Mixed adding and subtracting within 20 (alternate representations) and within 30<br>• Mixed counting in 2s, 5s and 10s<br>• Quarter<br>• 1 less to 100<br>• Mixed 1 more and 1 less in different representations |
| **Year 2 (for ages 6-7)** | • Number bonds to 10 (alternate representations)<br>• Number bonds to 20 (alternate representations)<br>• Addition and subtraction within 10<br>• Count in 2s<br>• Double | • Addition and subtraction within 20<br>• Partition two-digit numbers in different ways (20 + 3 / 10 + 13)<br>• Double and half<br>• Quarter | • Add and subtract two-digit and one-digit numbers (34 + 3 / 34 + 5 / 34 + 6)<br>• Using the inverse (1 + 2 = 3 / 3 – 2 = 1)<br>• 2 times table<br>• Half / two quarters | • Add and subtract two-digit numbers and tens (34 + 10 / 34 + 20 / 34 + 30)<br>• Derive related facts to 100 (3 + 4 = 30 / 30 + 40 = 70 / 70 = 30 + 40)<br>• Thirds | • Add and subtract two two-digit numbers (56 – 22 / 56 – 23 / 56 – 24)<br>• Add three one-digit numbers (1 + 5 + 7 / 1 + 4 + 8)<br>• 5 times table | • Add and subtract two two-digit numbers (56 + __ = 79 / 79 = __ + 56)<br>• 5 and 10 times tables |
| **Year 3 (for ages 7-8)** | • Three-digit numbers add ones (456 + 2 / + 3 / + 4)<br>• Partition two-digit numbers in different ways (80 + 2 / 70 + 12)<br>• Mixed 2, 5 and 10 times tables (including halves and doubles) | • Three-digit numbers subtract ones (456 – 2 / – 3 / – 4)<br>• Partition three-digit numbers in different ways (100 + 40 + 6 / 130 + 16)<br>• 3 and 4 times tables (including quarters) | • Three-digit numbers add tens (456 + 20 / + 30 / + 40)<br>• Derive related facts (30 + 40 / 300 + 400 / 50 + 20)<br>• 8 times table<br>• Add and subtract fractions with the same denominator ( + ) | • Three-digit numbers subtract tens (456 – 20 / – 30 / – 40)<br>• Add and subtract three-digit numbers (246 – 123 / 123 + 246)<br>• Distribute (4 x 12 x 5 / 4 x 5 x 12 / 20 x 12 = 240)<br>• Mixed times tables<br>• Unit fractions of numbers linking to those times tables | • Three-digit numbers add hundreds (456 + 200 / + 300 / + 400)<br>• Add and subtract three-digit numbers (246 – __ = 132 / 456 = __ + 321)<br>• Derive related facts to 1,000<br>• Two-digit times one-digit numbers (45 x 3 / 45 x 4) | • Three-digit numbers subtract hundreds (456 – 200 / – 300 / – 400)<br>• Derive related facts to 1,000<br>• Divide one-digit numbers by ten (40 / 10 then 4 / 10)<br>• Non-unit fraction of number (e.g.) relating to times tables |
| **Year 4 (for ages 8-9)** | • 10 / 100 more / less<br>• Mixed times tables (2, 5, 10, 3, 4, 8, including double, half, quarter, etc.)<br>• Multiply three numbers<br>• Add and subtract fractions (same denominators) | • 10 / 100 / 1,000 more / less<br>• Partition four-digit numbers in different ways (3,005 + 340 / 3,300 + 45)<br>• Derive related facts to 10,000 (e.g. 60 x 2)<br>• Unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / __ = 4564 + 2323)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Three-digit times one-digit numbers<br>• Non-unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / 5737 = __ – 1234)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit times one-digit numbers<br>• Divide a one- or two-digit number by 10 and 100 | • Add and subtract decimals (tenths)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Two-digit numbers divided by one-digit numbers<br>• Add and subtract fractions (same denominators; answers bigger than 1) | • Add and subtract decimals (hundredths)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit numbers divided by one-digit numbers |
| **Year 5 (for ages 9-10)** | • 10 / 100 / 1000 more / less<br>• Partition numbers in different ways<br>• Add and subtract decimals (complements of 1, e.g. 100 – 76 = __ / 1 – 0.76 =__)<br>• All times tables, including deriving related facts | • Powers of 10 more / less<br>• Square / square root<br>• Short multiplication<br>• Derive related facts to 10,000 (including fractions)<br>• Add and subtract fractions with the same denominator (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / __ = 84,564 + 12,323)<br>• Multiply and divide by 10, 100 and 1000<br>• Derive related facts to 100,000 (including fractions)<br>• Add and subtract fractions where the denominators are multiples of same number (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / 45,737 = __ – 31,234)<br>• Long multiplication<br>• Short division (no remainders)<br>• Non-unit fractions of whole numbers<br>• Add and subtract mixed numbers | • Add and subtract decimals (up to hundredths / mix of whole and decimal)<br>• Short division<br>• Multiply simple fractions by whole numbers | • Add and subtract decimals (up to hundredths / different number of places)<br>• Find 100%, 10%, 1%<br>• Find 50%, 20%, 25%<br>• Cube / cube root<br>• Find whole from unit fraction<br>• Multiply mixed numbers by whole numbers |
| **Year 6 (for ages 10-11)** | • Mixed whole number addition and subtraction<br>• Derive related facts to 100,000<br>• Multiply and divide by 10, 100 and 1,000<br>• Add and subtract fractions with denominators that are multiples of the same number | • Mixed decimal addition and subtraction<br>• Derive related facts to 1,000,000<br>• Add and subtract fractions with different denominators<br>• Fraction of number | • Square and cube numbers<br>• BODMAS<br>• Long multiplication<br>• Multiply pairs of fractions<br>• Find whole from fraction<br>• Percentage of number | • Short division<br>• Long division<br>• Divide fractions by whole numbers<br>• Mixed fractions and percentages of numbers<br>• Fractions to decimals | • Decimal long multiplication<br>• Multiply mixed pairs of fractions | • Decimal division<br>• Divide mixed number by whole number |

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# WEEK 1

## Monday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 20 | x | 9 | = | |
| 2. | 400 | x | 7 | = | |
| 3. | 100 + | | + 5 | = | 135 |
| 4. | 27 | ÷ | 3 | equals | |
| 5. | 43 | x | 5 | = | |
| 6. | $\frac{1}{5}$ | of | 20 | = | |
| 7. | $\frac{2}{5}$ | of | 20 | = | |
| 8. | 3 | x | 32 | equals | |
| 9. | $\frac{9}{12}$ | add | $\frac{2}{12}$ | = | |
| 10. | $\frac{15}{20}$ | take away | $\frac{4}{20}$ | = | |

## Tuesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 40 | x | 7 | = | |
| 2. | 500 | x | 5 | = | |
| 3. | 300 + | | + 2 | = | 392 |
| 4. | 45 | ÷ | 5 | equals | |
| 5. | 56 | x | 4 | = | |
| 6. | $\frac{1}{5}$ | of | 25 | = | |
| 7. | $\frac{2}{5}$ | of | 25 | = | |
| 8. | 4 | x | 29 | equals | |
| 9. | $\frac{3}{12}$ | add | $\frac{3}{12}$ | = | |
| 10. | $\frac{4}{20}$ | take away | $\frac{1}{20}$ | = | |

## Wednesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 70 | x | 5 | = | |
| 2. | 800 | x | 8 | = | |
| 3. | 600 + | | + 2 | = | 612 |
| 4. | 24 | ÷ | 3 | equals | |
| 5. | 63 | x | 3 | = | |
| 6. | $\frac{1}{6}$ | of | 24 | = | |
| 7. | $\frac{2}{6}$ | of | 24 | = | |
| 8. | 5 | x | 48 | equals | |
| 9. | $\frac{6}{11}$ | add | $\frac{3}{11}$ | = | |
| 10. | $\frac{19}{20}$ | take away | $\frac{15}{20}$ | = | |

## Thursday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 80 | x | 7 | = | |
| 2. | 600 | x | 8 | = | |
| 3. | 900 + | | + 1 | = | 951 |
| 4. | 36 | ÷ | 4 | equals | |
| 5. | 74 | x | 4 | = | |
| 6. | $\frac{1}{3}$ | of | 21 | = | |
| 7. | $\frac{2}{3}$ | of | 21 | = | |
| 8. | 3 | x | 37 | equals | |
| 9. | $\frac{4}{10}$ | add | $\frac{3}{10}$ | = | |
| 10. | $\frac{15}{20}$ | take away | $\frac{9}{20}$ | = | |

## Friday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 40 | x | 5 | = | |
| 2. | 400 | x | 4 | = | |
| 3. | 400 + | | + 8 | = | 498 |
| 4. | 64 | ÷ | 8 | equals | |
| 5. | 64 | x | 5 | = | |
| 6. | $\frac{1}{3}$ | of | 9 | = | |
| 7. | $\frac{2}{3}$ | of | 9 | = | |
| 8. | 3 | x | 27 | equals | |
| 9. | $\frac{1}{10}$ | add | $\frac{1}{10}$ | = | |
| 10. | $\frac{19}{20}$ | take away | $\frac{1}{20}$ | = | |

## Ninja challenge

Cho has 150 marbles. Tom says he has 67 marbles **less** than Cho. How many marbles does Tom have?

# WEEK 1

## Monday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 564 | + | 10 | = | |
| 2. | 564 | is | 10 | more than | |
| 3. | 554 | – | 10 | is equal to | |
| 4. | 2 | x | 2 | = | |
| 5. | 2 | x | 5 | = | |
| 6. | 2 | x | 10 | = | |
| 7. | 3 x | 3 x | 3 | = | |
| 8. | 4 x | 3 x | 3 | is equal to | |
| 9. | $\frac{1}{7}$ | + | $\frac{4}{7}$ | = | |
| 10. | | = | $\frac{4}{7}$ | + | $\frac{2}{7}$ |

## Tuesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 753 | – | 10 | = | |
| 2. | 753 | is | 10 | less than | |
| 3. | 763 | + | 10 | = | |
| 4. | 3 | x | 2 | = | |
| 5. | 3 | x | 4 | = | |
| 6. | 3 | x | 10 | = | |
| 7. | 2 x | 5 x | 6 | is equal to | |
| 8. | 2 x | 5 x | 3 | = | |
| 9. | $\frac{2}{8}$ | + | $\frac{3}{8}$ | = | |
| 10. | | = | $\frac{4}{8}$ | + | $\frac{3}{8}$ |

## Wednesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 583 | + | 10 | = | |
| 2. | 583 | is | 10 | more than | |
| 3. | 573 | – | 10 | is equal to | |
| 4. | 4 | x | 2 | = | |
| 5. | 4 | x | 5 | is equal to | |
| 6. | 4 | x | 10 | = | |
| 7. | 3 x | 2 x | 2 | = | |
| 8. | 3 x | 2 x | 4 | = | |
| 9. | $\frac{5}{9}$ | + | $\frac{3}{9}$ | = | |
| 10. | | = | $\frac{4}{9}$ | + | $\frac{4}{9}$ |

## Thursday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 375 | is | 10 | less than | |
| 2. | 385 | + | 10 | = | |
| 3. | 375 | – | 10 | = | |
| 4. | 5 | x | 2 | = | |
| 5. | 5 | x | 5 | = | |
| 6. | 5 | x | 10 | = | |
| 7. | 2 x | 5 x | 4 | = | |
| 8. | 4 x | 5 x | 4 | = | |
| 9. | $\frac{2}{12}$ | + | $\frac{7}{12}$ | = | |
| 10. | | = | $\frac{7}{12}$ | + | $\frac{3}{12}$ |

## Friday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 843 | + | 10 | = | |
| 2. | 843 | is | 10 | more than | |
| 3. | 833 | – | 10 | = | |
| 4. | 6 | x | 2 | = | |
| 5. | 6 | x | 5 | = | |
| 6. | 6 | x | 10 | = | |
| 7. | 3 x | 2 x | 2 | = | |
| 8. | 3 x | 3 x | 2 | = | |
| 9. | $\frac{6}{11}$ | + | $\frac{3}{11}$ | = | |
| 10. | | = | $\frac{4}{11}$ | + | $\frac{6}{11}$ |

## Ninja challenge

Sam says that 7 **groups** of 20 is **equal** to 140.
Is Sam correct? Explain why.



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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 2,348 | + | 1,364 | = | |
| 2. | 972 | + | | = | 1,817 |
| 3. | | + | 1,000 | = | 4,471 |
| 4. | 1,462 | – | | = | 511 |
| 5. | 738 | – | 236 | = | |
| 6. | | – | 100 | = | 2,820 |
| 7. | 9 | x | 6 | = | |
| 8. | | = | 4 | x | 24 |
| 9. | 45 | ÷ | | = | 9 |
| 10. | 90 | = | | ÷ | 40 |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 2,837 | + | 1,904 | = | |
| 2. | 805 | + | | = | 1,542 |
| 3. | | + | 1,000 | = | 5,261 |
| 4. | 1,378 | – | | = | 539 |
| 5. | 903 | – | 174 | = | |
| 6. | | – | 100 | = | 2,373 |
| 7. | 8 | x | 7 | = | |
| 8. | | = | 6 | x | 36 |
| 9. | 32 | ÷ | | = | 8 |
| 10. | 5 | = | | ÷ | 50 |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 3,057 | + | 1,362 | = | |
| 2. | 939 | + | | = | 1,167 |
| 3. | | + | 100 | = | 4,810 |
| 4. | 1,892 | – | | = | 1,518 |
| 5. | 943 | – | 273 | = | |
| 6. | | – | 1,000 | = | 2,472 |
| 7. | 6 | x | 8 | = | |
| 8. | | = | 4 | x | 65 |
| 9. | 54 | ÷ | | = | 9 |
| 10. | 12 | = | | ÷ | 40 |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 1,363 | + | 1,189 | = | |
| 2. | 903 | + | | = | 1,090 |
| 3. | | + | 1,000 | = | 5,502 |
| 4. | 3,271 | – | | = | 2,425 |
| 5. | 954 | – | 635 | = | |
| 6. | | – | 1,000 | = | 3,572 |
| 7. | 7 | x | 7 | = | |
| 8. | | = | 7 | x | 53 |
| 9. | 36 | ÷ | | = | 6 |
| 10. | 6 | = | | ÷ | 80 |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 2,045 | + | 1,837 | = | |
| 2. | 978 | + | | = | 1,285 |
| 3. | | + | 100 | = | 4,472 |
| 4. | 3,384 | – | | = | 2,742 |
| 5. | 941 | – | 473 | = | |
| 6. | | – | 100 | = | 4,294 |
| 7. | 5 | x | 9 | = | |
| 8. | | = | 4 | x | 78 |
| 9. | 28 | ÷ | | = | 4 |
| 10. | 3 | = | | ÷ | 60 |

## Ninja challenge

Cho says that 1,463 is 200 **more than** 1,236.
Is Cho correct? Explain why.

ANDREW JENNINGS WITH SARAH FARRELL

# ARITHMETIC NINJA

## FOR AGES 9–10

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# Content map for Arithmetic Ninja

| | Autumn term 1: Weeks 1–6 | Autumn term 2: Weeks 7–12 | Spring term 1: Weeks 13–18 | Spring term 2: Weeks 19–25 | Summer term 1: Weeks 26–32 | Summer term 2: Weeks 33–39 |
|---|---|---|---|---|---|---|
| **Year 1 (for ages 5-6)** | • Number bonds to 10, e.g. 9 + 1 / 1+ 9<br>• Add one- and two-digit numbers within 20 (13 + 1 / 13 + 2 / 13 + 3)<br>• Include language of 1 more<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 10 (alternate representations, e.g. 10 = __ + 4)<br>• Subtract one- and two-digit numbers within 20 (15 – 3 / 15 – 4 / 15 – 5)<br>• Include language of 1 less<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 20 (19 + 1 / 1 + 19)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 more to 50<br>• 5 + 5<br>• Half | • Number bonds to 20 (alternate representations, e.g. 20 = __ + 1)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 less to 50<br>• 5 + 5<br>• Half | • Add and subtract one- and two-digit numbers within 20 (alternate representations including answer box at the beginning AND missing number, e.g. 7 = __ – 9)<br>• Count in 10s (lots of)<br>• 10 + 10<br>• Quarter<br>• 1 more to 100 | • Mixed adding and subtracting within 20 (alternate representations) and within 30<br>• Mixed counting in 2s, 5s and 10s<br>• Quarter<br>• 1 less to 100<br>• Mixed 1 more and 1 less in different representations |
| **Year 2 (for ages 6-7)** | • Number bonds to 10 (alternate representations)<br>• Number bonds to 20 (alternate representations)<br>• Addition and subtraction within 10<br>• Count in 2s<br>• Double | • Addition and subtraction within 20<br>• Partition two-digit numbers in different ways (20 + 3 / 10 + 13)<br>• Double and half<br>• Quarter | • Add and subtract two-digit and one-digit numbers (34 + 3 / 34 + 5 / 34 + 6)<br>• Using the inverse (1 + 2 = 3 / 3 – 2 = 1)<br>• 2 times table<br>• Half / two quarters | • Add and subtract two-digit numbers and tens (34 + 10 / 34 + 20 / 34 + 30)<br>• Derive related facts to 100 (3 + 4 = 30 / 30 + 40 = 70 / 70 = 30 + 40)<br>• Thirds | • Add and subtract two two-digit numbers (56 – 22 / 56 – 23 / 56 – 24)<br>• Add three one-digit numbers (1 + 5 + 7 / 1 + 4 + 8)<br>• 5 times table | • Add and subtract two two-digit numbers (56 + __ = 79 / 79 = __ + 56)<br>• 5 and 10 times tables |
| **Year 3 (for ages 7-8)** | • Three-digit numbers add ones (456 + 2 / + 3 / + 4)<br>• Partition two-digit numbers in different ways (80 + 2 / 70 + 12)<br>• Mixed 2, 5 and 10 times tables (including halves and doubles) | • Three-digit numbers subtract ones (456 – 2 / – 3 / – 4)<br>• Partition three-digit numbers in different ways (100 + 40 + 6 / 130 + 16)<br>• 3 and 4 times tables (including quarters) | • Three-digit numbers add tens (456 + 20 / + 30 / + 40)<br>• Derive related facts (30 + 40 / 300 + 400 / 50 + 20)<br>• 8 times table<br>• Add and subtract fractions with the same denominator ( + ) | • Three-digit numbers subtract tens (456 – 20 / – 30 / – 40)<br>• Add and subtract three-digit numbers (246 – 123 / 123 + 246)<br>• Distribute (4 x 12 x 5 / 4 x 5 x 12 / 20 x 12 = 240)<br>• Mixed times tables<br>• Unit fractions of numbers linking to those times tables | • Three-digit numbers add hundreds (456 + 200 / + 300 / + 400)<br>• Add and subtract three-digit numbers (246 – __ = 132 / 456 = __ + 321)<br>• Derive related facts to 1,000<br>• Two-digit times one-digit numbers (45 x 3 / 45 x 4) | • Three-digit numbers subtract hundreds (456 – 200 / – 300 / – 400)<br>• Derive related facts to 1,000<br>• Divide one-digit numbers by ten (40 / 10 then 4 / 10)<br>• Non-unit fraction of number (e.g.) relating to times tables |
| **Year 4 (for ages 8-9)** | • 10 / 100 more / less<br>• Mixed times tables (2, 5, 10, 3, 4, 8, including double, half, quarter, etc.)<br>• Multiply three numbers<br>• Add and subtract fractions (same denominators) | • 10 / 100 / 1,000 more / less<br>• Partition four-digit numbers in different ways (3,005 + 340 / 3,300 + 45)<br>• Derive related facts to 10,000 (e.g. 60 x 2)<br>• Unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / __ = 4564 + 2323)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Three-digit times one-digit numbers<br>• Non-unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / 5737 = __ – 1234)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit times one-digit numbers<br>• Divide a one- or two-digit number by 10 and 100 | • Add and subtract decimals (tenths)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Two-digit numbers divided by one-digit numbers<br>• Add and subtract fractions (same denominators; answers bigger than 1) | • Add and subtract decimals (hundredths)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit numbers divided by one-digit numbers |
| **Year 5 (for ages 9-10)** | • 10 / 100 / 1000 more / less<br>• Partition numbers in different ways<br>• Add and subtract decimals (complements of 1, e.g. 100 – 76 = __ / 1 – 0.76 =__)<br>• All times tables, including deriving related facts | • Powers of 10 more / less<br>• Square / square root<br>• Short multiplication<br>• Derive related facts to 10,000 (including fractions)<br>• Add and subtract fractions with the same denominator (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / __ = 84,564 + 12,323)<br>• Multiply and divide by 10, 100 and 1000<br>• Derive related facts to 100,000 (including fractions)<br>• Add and subtract fractions where the denominators are multiples of same number (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / 45,737 = __ – 31,234)<br>• Long multiplication<br>• Short division (no remainders)<br>• Non-unit fractions of whole numbers<br>• Add and subtract mixed numbers | • Add and subtract decimals (up to hundredths / mix of whole and decimal)<br>• Short division<br>• Multiply simple fractions by whole numbers | • Add and subtract decimals (up to hundredths / different number of places)<br>• Find 100%, 10%, 1%<br>• Find 50%, 20%, 25%<br>• Cube / cube root<br>• Find whole from unit fraction<br>• Multiply mixed numbers by whole numbers |
| **Year 6 (for ages 10-11)** | • Mixed whole number addition and subtraction<br>• Derive related facts to 100,000<br>• Multiply and divide by 10, 100 and 1,000<br>• Add and subtract fractions with denominators that are multiples of the same number | • Mixed decimal addition and subtraction<br>• Derive related facts to 1,000,000<br>• Add and subtract fractions with different denominators<br>• Fraction of number | • Square and cube numbers<br>• BODMAS<br>• Long multiplication<br>• Multiply pairs of fractions<br>• Find whole from fraction<br>• Percentage of number | • Short division<br>• Long division<br>• Divide fractions by whole numbers<br>• Mixed fractions and percentages of numbers<br>• Fractions to decimals | • Decimal long multiplication<br>• Multiply mixed pairs of fractions | • Decimal division<br>• Divide mixed number by whole number |

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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 3,204 | + | 1,000 | = | |
| 2. | 1,384 | + | 838 | = | |
| 3. | 2.4 | + | 1.3 | = | |
| 4. | 1,047 | – | 100 | = | |
| 5. | 5,283 | – | 843 | = | |
| 6. | 2.4 | – | 1.2 | = | |
| 7. | 8 | x | 5 | = | |
| 8. | 9 | x | 7 | = | |
| 9. | 36 | ÷ | 4 | = | |
| 10. | 24 | ÷ | 3 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 4,904 | + | 100 | = | |
| 2. | 2,731 | + | 916 | = | |
| 3. | 3.2 | + | 1.7 | = | |
| 4. | 1,069 | – | 100 | = | |
| 5. | 4,104 | – | 596 | = | |
| 6. | 3.9 | – | 2.3 | = | |
| 7. | 6 | x | 7 | = | |
| 8. | 9 | x | 5 | = | |
| 9. | 16 | ÷ | 4 | = | |
| 10. | 28 | ÷ | 7 | = | |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 1,012 | + | 100 | = | |
| 2. | 3,705 | + | 904 | = | |
| 3. | 4.5 | + | 2.6 | = | |
| 4. | 1,839 | – | 100 | = | |
| 5. | 3,045 | – | 672 | = | |
| 6. | 4.1 | – | 1.8 | = | |
| 7. | 8 | x | 3 | = | |
| 8. | 12 | x | 3 | = | |
| 9. | 44 | ÷ | 11 | = | |
| 10. | 35 | ÷ | 7 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 945 | + | 100 | = | |
| 2. | 3,473 | + | 1,273 | = | |
| 3. | 8.4 | + | 1.8 | = | |
| 4. | 2,384 | – | 100 | = | |
| 5. | 3,470 | – | 1,263 | = | |
| 6. | 5.2 | – | 0.8 | = | |
| 7. | 9 | x | 5 | = | |
| 8. | 8 | x | 8 | = | |
| 9. | 36 | ÷ | 6 | = | |
| 10. | 32 | ÷ | 4 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 1,915 | + | 100 | = | |
| 2. | 4,329 | + | 2,366 | = | |
| 3. | 7.3 | + | 2.4 | = | |
| 4. | 3,471 | – | 100 | = | |
| 5. | 5,488 | – | 1,263 | = | |
| 6. | 6.2 | – | 1.6 | = | |
| 7. | 8 | x | 5 | = | |
| 8. | 6 | x | 9 | = | |
| 9. | 25 | ÷ | 5 | = | |
| 10. | 49 | ÷ | 7 | = | |

## Ninja challenge

Cho has 3,500 marbles. Tom says he has 870 marbles **less** than Cho. **How many** marbles does Tom have?

# WEEK 1

## Monday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 7,423 | + | 10 | = | |
| 2. | | = | 7,423 | + | 100 |
| 3. | 7,423 | add | 1,000 | is equal to | |
| 4. | 0.45 | + | | = | 1 |
| 5. | 1 | = | 0.23 | + | |
| 6. | 4,506 | = | 4,006 | + | |
| 7. | 4,217 | = | 4,207 | + | |
| 8. | 4 | x | 3 | = | |
| 9. | 3 | x | 4 | = | |
| 10. | 30 | x | 4 | = | |

## Tuesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 5,697 | + | 10 | = | |
| 2. | | = | 5,697 | + | 100 |
| 3. | 5,697 | + | 1,000 | = | |
| 4. | 0.97 | + | | = | 1 |
| 5. | 1 | = | 0.22 | + | |
| 6. | 3,006 | + | 670 | = | |
| 7. | 5,685 | = | 5,600 | + | |
| 8. | 4 | x | 6 | = | |
| 9. | 6 | x | 4 | = | |
| 10. | 6 | x | 40 | = | |

## Wednesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 2,485 | + | 10 | = | |
| 2. | | = | 2,485 | + | 100 |
| 3. | 2,485 | + | 1,000 | = | |
| 4. | 0.67 | + | | = | 1 |
| 5. | 1 | = | 0.87 | + | |
| 6. | 3,060 | + | 308 | = | |
| 7. | 7,695 | = | 7,005 | + | |
| 8. | 2 | x | 9 | = | |
| 9. | 9 | x | 2 | = | |
| 10. | 9 | x | 20 | = | |

## Thursday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 6,797 | + | 10 | = | |
| 2. | | = | 6,797 | + | 100 |
| 3. | 6,897 | + | 1,000 | = | |
| 4. | 0.51 | + | | = | 1 |
| 5. | 1 | = | 0.99 | + | |
| 6. | 9,040 | + | 804 | = | |
| 7. | 5,694 | = | 5,600 | + | |
| 8. | 11 | x | 6 | = | |
| 9. | 6 | x | 11 | = | |
| 10. | 60 | x | 11 | = | |

## Friday

| | | | | | |
|---|---|---|---|---|---|
| 1. | 2,482 | + | 10 | = | |
| 2. | | = | 2,482 | + | 100 |
| 3. | 2,482 | add | 1,000 | is equal to | |
| 4. | 0.01 | + | | = | 1 |
| 5. | 1 | = | 0.12 | + | |
| 6. | 9,900 | + | 45 | = | |
| 7. | 3,685 | = | 3,005 | + | |
| 8. | 5 | x | 6 | = | |
| 9. | 6 | x | 5 | = | |
| 10. | 60 | x | 5 | = | |

## Ninja challenge

Sam says that 3 **groups of** 40 is **equal** to 120.
Is Sam correct? Explain why.



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# WEEK 1

## Monday

| | | | | | |
|---|---|---|---|---|---|
| 1. | | = | 22.5 | plus | 14.7 |
| 2. | | equals | 14.5 | – | 6.7 |
| 3. | | = | 40 | x | 9 |
| 4. | | = | 81 | ÷ | 9 |
| 5. | | equals | 263 | times | 5 |
| 6. | | ÷ | 10 | = | 5.7 |
| 7. | | = | 43 | ÷ | 10 |
| 8. | | = | 43,483 | + | 37,408 |
| 9. | | = | 50,394 | subtract | 17,490 |
| 10. | $\frac{8}{9}$ | = | $\frac{3}{9}$ | add | |

## Tuesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | | = | 31.3 | plus | 20.9 |
| 2. | | equals | 21.3 | – | 9.5 |
| 3. | | = | 50 | x | 7 |
| 4. | | = | 72 | ÷ | 8 |
| 5. | | equals | 187 | times | 6 |
| 6. | | ÷ | 10 | = | 6.4 |
| 7. | | = | 87 | ÷ | 10 |
| 8. | | = | 51,038 | + | 19,445 |
| 9. | | = | 60,394 | subtract | 21,809 |
| 10. | $\frac{6}{9}$ | = | $\frac{1}{9}$ | add | |

## Wednesday

| | | | | | |
|---|---|---|---|---|---|
| 1. | | = | 45.4 | plus | 22.7 |
| 2. | | equals | 31.6 | – | 11.9 |
| 3. | | = | 70 | x | 6 |
| 4. | | = | 48 | ÷ | 8 |
| 5. | | equals | 206 | times | 8 |
| 6. | | ÷ | 10 | = | 5.6 |
| 7. | | = | 92 | ÷ | 10 |
| 8. | | = | 65,084 | + | 32,388 |
| 9. | | = | 75,301 | subtract | 43,212 |
| 10. | $\frac{7}{8}$ | = | $\frac{6}{8}$ | add | |

## Thursday

| | | | | | |
|---|---|---|---|---|---|
| 1. | | = | 56.2 | plus | 31.9 |
| 2. | | equals | 30.5 | – | 15.9 |
| 3. | | = | 90 | x | 6 |
| 4. | | = | 32 | ÷ | 8 |
| 5. | | equals | 274 | times | 6 |
| 6. | | ÷ | 10 | = | 9.4 |
| 7. | | = | 82 | ÷ | 10 |
| 8. | | = | 78,384 | + | 28,808 |
| 9. | | = | 81,289 | subtract | 30,047 |
| 10. | $\frac{9}{12}$ | = | $\frac{6}{12}$ | add | |

## Friday

| | | | | | |
|---|---|---|---|---|---|
| 1. | | = | 62.7 | plus | 42.8 |
| 2. | | equals | 45.1 | – | 16.8 |
| 3. | | = | 70 | x | 9 |
| 4. | | = | 96 | ÷ | 8 |
| 5. | | equals | 327 | times | 7 |
| 6. | | ÷ | 10 | = | 8.1 |
| 7. | | = | 93 | ÷ | 10 |
| 8. | | = | 75,083 | + | 34,906 |
| 9. | | = | 83,008 | subtract | 45,381 |
| 10. | $\frac{10}{13}$ | = | $\frac{7}{13}$ | add | |

## Ninja challenge

Cho says that 39,463 is 9,362 **more than** 29,236. Is Cho correct? Explain why.

ANDREW JENNINGS WITH PAUL TUCKER

# ARITHMETIC NINJA

## FOR AGES 10–11

BLOOMSBURY EDUCATION
LONDON OXFORD NEW YORK NEW DELHI SYDNEY

# Content map for Arithmetic Ninja

| | Autumn term 1: Weeks 1–6 | Autumn term 2: Weeks 7–12 | Spring term 1: Weeks 13–18 | Spring term 2: Weeks 19–25 | Summer term 1: Weeks 26–32 | Summer term 2: Weeks 33–39 |
|---|---|---|---|---|---|---|
| **Year 1 (for ages 5-6)** | • Number bonds to 10, e.g. 9 + 1 / 1+ 9<br>• Add one- and two-digit numbers within 20 (13 + 1 / 13 + 2 / 13 + 3)<br>• Include language of 1 more<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 10 (alternate representations, e.g. 10 = __ + 4)<br>• Subtract one- and two-digit numbers within 20 (15 – 3 / 15 – 4 / 15 – 5)<br>• Include language of 1 less<br>• Double<br>• Count in 2s (lots of) | • Number bonds to 20 (19 + 1 / 1 + 19)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 more to 50<br>• 5 + 5<br>• Half | • Number bonds to 20 (alternate representations, e.g. 20 = __ + 1)<br>• Add and subtract one- and two-digit numbers within 20 (answer box at beginning OR missing number question, e.g. __ – 7 = 9 OR __ = 16 – 9)<br>• Count in 5s (lots of)<br>• 1 less to 50<br>• 5 + 5<br>• Half | • Add and subtract one- and two-digit numbers within 20 (alternate representations including answer box at the beginning AND missing number, e.g. 7 = __ – 9)<br>• Count in 10s (lots of)<br>• 10 + 10<br>• Quarter<br>• 1 more to 100 | • Mixed adding and subtracting within 20 (alternate representations) and within 30<br>• Mixed counting in 2s, 5s and 10s<br>• Quarter<br>• 1 less to 100<br>• Mixed 1 more and 1 less in different representations |
| **Year 2 (for ages 6-7)** | • Number bonds to 10 (alternate representations)<br>• Number bonds to 20 (alternate representations)<br>• Addition and subtraction within 10<br>• Count in 2s<br>• Double | • Addition and subtraction within 20<br>• Partition two-digit numbers in different ways (20 + 3 / 10 + 13)<br>• Double and half<br>• Quarter | • Add and subtract two-digit and one-digit numbers (34 + 3 / 34 + 5 / 34 + 6)<br>• Using the inverse (1 + 2 = 3 / 3 – 2 = 1)<br>• 2 times table<br>• Half / two quarters | • Add and subtract two-digit numbers and tens (34 + 10 / 34 + 20 / 34 + 30)<br>• Derive related facts to 100 (3 + 4 = 30 / 30 + 40 = 70 / 70 = 30 + 40)<br>• Thirds | • Add and subtract two two-digit numbers (56 – 22 / 56 – 23 / 56 – 24)<br>• Add three one-digit numbers (1 + 5 + 7 / 1 + 4 + 8)<br>• 5 times table | • Add and subtract two two-digit numbers (56 + __ = 79 / 79 = __ + 56)<br>• 5 and 10 times tables |
| **Year 3 (for ages 7-8)** | • Three-digit numbers add ones (456 + 2 / + 3 / + 4)<br>• Partition two-digit numbers in different ways (80 + 2 / 70 + 12)<br>• Mixed 2, 5 and 10 times tables (including halves and doubles) | • Three-digit numbers subtract ones (456 – 2 / – 3 / – 4)<br>• Partition three-digit numbers in different ways (100 + 40 + 6 / 130 + 16)<br>• 3 and 4 times tables (including quarters) | • Three-digit numbers add tens (456 + 20 / + 30 / + 40)<br>• Derive related facts (30 + 40 / 300 + 400 / 50 + 20)<br>• 8 times table<br>• Add and subtract fractions with the same denominator ( + ) | • Three-digit numbers subtract tens (456 – 20 / – 30 / – 40)<br>• Add and subtract three-digit numbers (246 – 123 / 123 + 246)<br>• Distribute (4 x 12 x 5 / 4 x 5 x 12 / 20 x 12 = 240)<br>• Mixed times tables<br>• Unit fractions of numbers linking to those times tables | • Three-digit numbers add hundreds (456 + 200 / + 300 / + 400)<br>• Add and subtract three-digit numbers (246 – __ = 132 / 456 = __ + 321)<br>• Derive related facts to 1,000<br>• Two-digit times one-digit numbers (45 x 3 / 45 x 4) | • Three-digit numbers subtract hundreds (456 – 200 / – 300 / – 400)<br>• Derive related facts to 1,000<br>• Divide one-digit numbers by ten (40 / 10 then 4 / 10)<br>• Non-unit fraction of number (e.g.) relating to times tables |
| **Year 4 (for ages 8-9)** | • 10 / 100 more / less<br>• Mixed times tables (2, 5, 10, 3, 4, 8, including double, half, quarter, etc.)<br>• Multiply three numbers<br>• Add and subtract fractions (same denominators) | • 10 / 100 / 1,000 more / less<br>• Partition four-digit numbers in different ways (3,005 + 340 / 3,300 + 45)<br>• Derive related facts to 10,000 (e.g. 60 x 2)<br>• Unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / __ = 4564 + 2323)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Three-digit times one-digit numbers<br>• Non-unit fractions of numbers | • Add and subtract four-digit numbers (4564 + 2323 = __ / 5737 = __ – 1234)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit times one-digit numbers<br>• Divide a one- or two-digit number by 10 and 100 | • Add and subtract decimals (tenths)<br>• Derive related facts to 10,000 (e.g. 600 x 2)<br>• Two-digit numbers divided by one-digit numbers<br>• Add and subtract fractions (same denominators; answers bigger than 1) | • Add and subtract decimals (hundredths)<br>• Derive related facts to 10,000 (including fractions of numbers)<br>• Three-digit numbers divided by one-digit numbers |
| **Year 5 (for ages 9-10)** | • 10 / 100 / 1000 more / less<br>• Partition numbers in different ways<br>• Add and subtract decimals (complements of 1, e.g. 100 – 76 = __ / 1 – 0.76 =__)<br>• All times tables, including deriving related facts | • Powers of 10 more / less<br>• Square / square root<br>• Short multiplication<br>• Derive related facts to 10,000 (including fractions)<br>• Add and subtract fractions with the same denominator (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / __ = 84,564 + 12,323)<br>• Multiply and divide by 10, 100 and 1000<br>• Derive related facts to 100,000 (including fractions)<br>• Add and subtract fractions where the denominators are multiples of same number (answers bigger than 1) | • Add and subtract more than four-digit numbers (84,564 + 12,323 = __ / 45,737 = __ – 31,234)<br>• Long multiplication<br>• Short division (no remainders)<br>• Non-unit fractions of whole numbers<br>• Add and subtract mixed numbers | • Add and subtract decimals (up to hundredths / mix of whole and decimal)<br>• Short division<br>• Multiply simple fractions by whole numbers | • Add and subtract decimals (up to hundredths / different number of places)<br>• Find 100%, 10%, 1%<br>• Find 50%, 20%, 25%<br>• Cube / cube root<br>• Find whole from unit fraction<br>• Multiply mixed numbers by whole numbers |
| **Year 6 (for ages 10-11)** | • Mixed whole number addition and subtraction<br>• Derive related facts to 100,000<br>• Multiply and divide by 10, 100 and 1,000<br>• Add and subtract fractions with denominators that are multiples of the same number | • Mixed decimal addition and subtraction<br>• Derive related facts to 1,000,000<br>• Add and subtract fractions with different denominators<br>• Fraction of number | • Square and cube numbers<br>• BODMAS<br>• Long multiplication<br>• Multiply pairs of fractions<br>• Find whole from fraction<br>• Percentage of number | • Short division<br>• Long division<br>• Divide fractions by whole numbers<br>• Mixed fractions and percentages of numbers<br>• Fractions to decimals | • Decimal long multiplication<br>• Multiply mixed pairs of fractions | • Decimal division<br>• Divide mixed number by whole number |

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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 245 | + | 132 | = | |
| 2. | 86 | – | 32 | = | |
| 3. | 7 | x | 8 | = | |
| 4. | 36 | ÷ | 6 | = | |
| 5. | 101 | add | 100 | = | |
| 6. | 102 | subtract | 70 | = | |
| 7. | 81 | divided by | 9 | = | |
| 8. | 6 | multiplied by | 7 | = | |
| 9. | half | of | 50 | = | |
| 10. | double | | 60 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 173 | + | 98 | = | |
| 2. | 121 | – | 54 | = | |
| 3. | 6 | x | 5 | = | |
| 4. | 42 | ÷ | 6 | = | |
| 5. | 151 | add | 51 | = | |
| 6. | 99 | subtract | 18 | = | |
| 7. | 48 | divided by | 6 | = | |
| 8. | 6 | multiplied by | 9 | = | |
| 9. | half | of | 30 | = | |
| 10. | double | | 25 | = | |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 231 | + | 126 | = | |
| 2. | 153 | – | 67 | = | |
| 3. | 8 | x | 4 | = | |
| 4. | 32 | ÷ | 8 | = | |
| 5. | 99 | add | 49 | = | |
| 6. | 101 | subtract | 10 | = | |
| 7. | 54 | divided by | 9 | = | |
| 8. | 4 | multiplied by | 9 | = | |
| 9. | half | of | 40 | = | |
| 10. | double | | 60 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 324 | + | 97 | = | |
| 2. | 89 | – | 42 | = | |
| 3. | 7 | x | 4 | = | |
| 4. | 25 | ÷ | 5 | = | |
| 5. | 98 | add | 27 | = | |
| 6. | 101 | subtract | 9 | = | |
| 7. | 49 | divided by | 7 | = | |
| 8. | 5 | multiplied by | 9 | = | |
| 9. | half | of | 100 | = | |
| 10. | double | | 50 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 298 | + | 132 | = | |
| 2. | 201 | – | 109 | = | |
| 3. | 12 | x | 4 | = | |
| 4. | 48 | ÷ | 12 | = | |
| 5. | 101 | add | 99 | = | |
| 6. | 101 | subtract | 19 | = | |
| 7. | 64 | divided by | 8 | = | |
| 8. | 7 | multiplied by | 9 | = | |
| 9. | half | of | 80 | = | |
| 10. | double | | 30 | = | |

## Ninja challenge

Cho has 783 marbles. Tom says he has 640 marbles **fewer** than Cho. **How many** marbles does Tom have?

# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 35 | ÷ | 10 | = | |
| 2. | 35 | ÷ | 100 | = | |
| 3. | 45 | ÷ | 10 | = | |
| 4. | 124 | ÷ | 10 | = | |
| 5. | 124 | ÷ | 100 | = | |
| 6. | 10% | of | 45 | = | |
| 7. | 1% | of | 45 | = | |
| 8. | 9 | x | 9 | = | |
| 9. | 9 | x | 0.9 | = | |
| 10. | 18 | x | 9 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 97 | ÷ | 10 | = | |
| 2. | 97 | ÷ | 100 | = | |
| 3. | 123 | ÷ | 10 | = | |
| 4. | 9 | ÷ | 10 | = | |
| 5. | 1,234 | ÷ | 1,000 | = | |
| 6. | 10% | of | 90 | = | |
| 7. | 20% | of | 90 | = | |
| 8. | 7 | x | 7 | = | |
| 9. | 7 | x | 0.7 | = | |
| 10. | 7 | x | 14 | = | |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 9 | x | 1 | = | |
| 2. | 9 | x | 0.1 | = | |
| 3. | 9 | x | $\frac{1}{10}$ | = | |
| 4. | $\frac{1}{10}$ | of | 9 | = | |
| 5. | $\frac{2}{10}$ | of | 9 | = | |
| 6. | 10% | of | 9 | = | |
| 7. | 20% | of | 9 | = | |
| 8. | 8 | x | 8 | = | |
| 9. | 8 | x | 0.8 | = | |
| 10. | 8 | x | 80 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 8 | x | 2 | = | |
| 2. | 8 | x | 0.2 | = | |
| 3. | 8 | x | $\frac{2}{10}$ | = | |
| 4. | $\frac{1}{10}$ | of | 80 | = | |
| 5. | $\frac{2}{10}$ | of | 80 | = | |
| 6. | 10% | of | 80 | = | |
| 7. | 20% | of | 80 | = | |
| 8. | 9 | x | 8 | = | |
| 9. | 9 | x | 0.8 | = | |
| 10. | 9 | x | 16 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 9 | x | 3 | = | |
| 2. | 9 | x | 0.3 | = | |
| 3. | 9 | x | $\frac{3}{10}$ | = | |
| 4. | $\frac{1}{10}$ | of | 90 | = | |
| 5. | $\frac{3}{10}$ | of | 90 | = | |
| 6. | 10% | of | 90 | = | |
| 7. | 30% | of | 90 | = | |
| 8. | 30% | of | 900 | = | |
| 9. | 30% | of | 9 | = | |
| 10. | 3% | of | 90 | = | |

## Ninja challenge

Tom says that 7 **groups** of 500 is **equal** to 3,500. Is Tom correct? Explain why.

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# WEEK 1

| Monday | | | | | |
|---|---|---|---|---|---|
| 1. | 12,405 | + | 1,506 | = | |
| 2. | 34,917 | – | 4,682 | = | |
| 3. | 105 | x | 4 | = | |
| 4. | 432 | ÷ | 5 | = | |
| 5. | 9 | – | 1.14 | = | |
| 6. | 0.9 | ÷ | 10 | = | |
| 7. | 720 | ÷ | 9 | = | |
| 8. | 12% | of | 240 | = | |
| 9. | 39 | x | 13 | = | |
| 10. | 1,035 | ÷ | 23 | = | |

| Tuesday | | | | | |
|---|---|---|---|---|---|
| 1. | 32,529 | + | 7,603 | = | |
| 2. | 15,739 | – | 9,909 | = | |
| 3. | 76 | x | 5 | = | |
| 4. | 324 | ÷ | 6 | = | |
| 5. | 8 | – | 3.56 | = | |
| 6. | 1.7 | ÷ | 100 | = | |
| 7. | 1,440 | ÷ | 12 | = | |
| 8. | 11% | of | 145 | = | |
| 9. | 42 | x | 26 | = | |
| 10. | 2,108 | ÷ | 34 | = | |

| Wednesday | | | | | |
|---|---|---|---|---|---|
| 1. | 19,767 | + | 10,757 | = | |
| 2. | 20,802 | – | 11,719 | = | |
| 3. | 85 | x | 3 | = | |
| 4. | 286 | ÷ | 4 | = | |
| 5. | 4 | – | 1.07 | = | |
| 6. | 0.9 | ÷ | 100 | = | |
| 7. | 1,320 | ÷ | 11 | = | |
| 8. | 12% | of | 97 | = | |
| 9. | 53 | x | 17 | = | |
| 10. | 1,628 | ÷ | 37 | = | |

| Thursday | | | | | |
|---|---|---|---|---|---|
| 1. | 24,090 | + | 9,726 | = | |
| 2. | 40,000 | – | 12,405 | = | |
| 3. | 132 | x | 6 | = | |
| 4. | 572 | ÷ | 4 | = | |
| 5. | 10 | – | 2.56 | = | |
| 6. | 1.8 | ÷ | 10 | = | |
| 7. | 810 | ÷ | 9 | = | |
| 8. | 11% | of | 101 | = | |
| 9. | 46 | x | 21 | = | |
| 10. | 2,106 | ÷ | 39 | = | |

| Friday | | | | | |
|---|---|---|---|---|---|
| 1. | 37,109 | + | 589 | = | |
| 2. | 25,785 | – | 6,528 | = | |
| 3. | 209 | x | 5 | = | |
| 4. | 427 | ÷ | 7 | = | |
| 5. | 12 | – | 1.075 | = | |
| 6. | 3.2 | ÷ | 100 | = | |
| 7. | 540 | ÷ | 6 | = | |
| 8. | 12% | of | 244 | = | |
| 9. | 32 | x | 19 | = | |
| 10. | 504 | ÷ | 14 | = | |

## Ninja challenge

Cho says that 123,463 is 24,500 **more than** 98,463. Is Cho correct? Explain why.