

Developing Whole School Approaches to Problem Solving

Focus: World Cup (1)

Foundation Stage and Key Stage One	Key Stage Two
National Curriculum level/sub level and framework objectives	National Curriculum level/sub/level and framework objectives
<p>Activities and progression</p> <ul style="list-style-type: none"> • Shirts: Which teams could play each other without a second strip? • Shirts: Add up numbers on shirts. • Follow a team: If they had scored 3 more what would they score? • How many did they need to win? • How many matches has the winner scored? • Who scored most goals? • Did the winning team score most goals? 	<p>Activities and progression</p> <ul style="list-style-type: none"> • What is the highest total of digits on the pitch at any time? (shirt/squad numbers) What would be the lowest? • Formations of players on pitch (shape). Possible formations. • Prediction of player performance (links to player performance ratings in newspapers / on internet). • Pick your own player – striker – who will be top scorer? • Logic problems – 3 children’s names – support football. 2 like the same team – one does not like Team A, etc. • Calculations arranged around stadium capacity. • Average scores of teams. • Predicting form based on qualifying scores.
Assessment opportunities	Assessment opportunities
Links to the wider curriculum	Links to the wider curriculum Geography

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Focus: **Problem Solving in World Cup (2)**

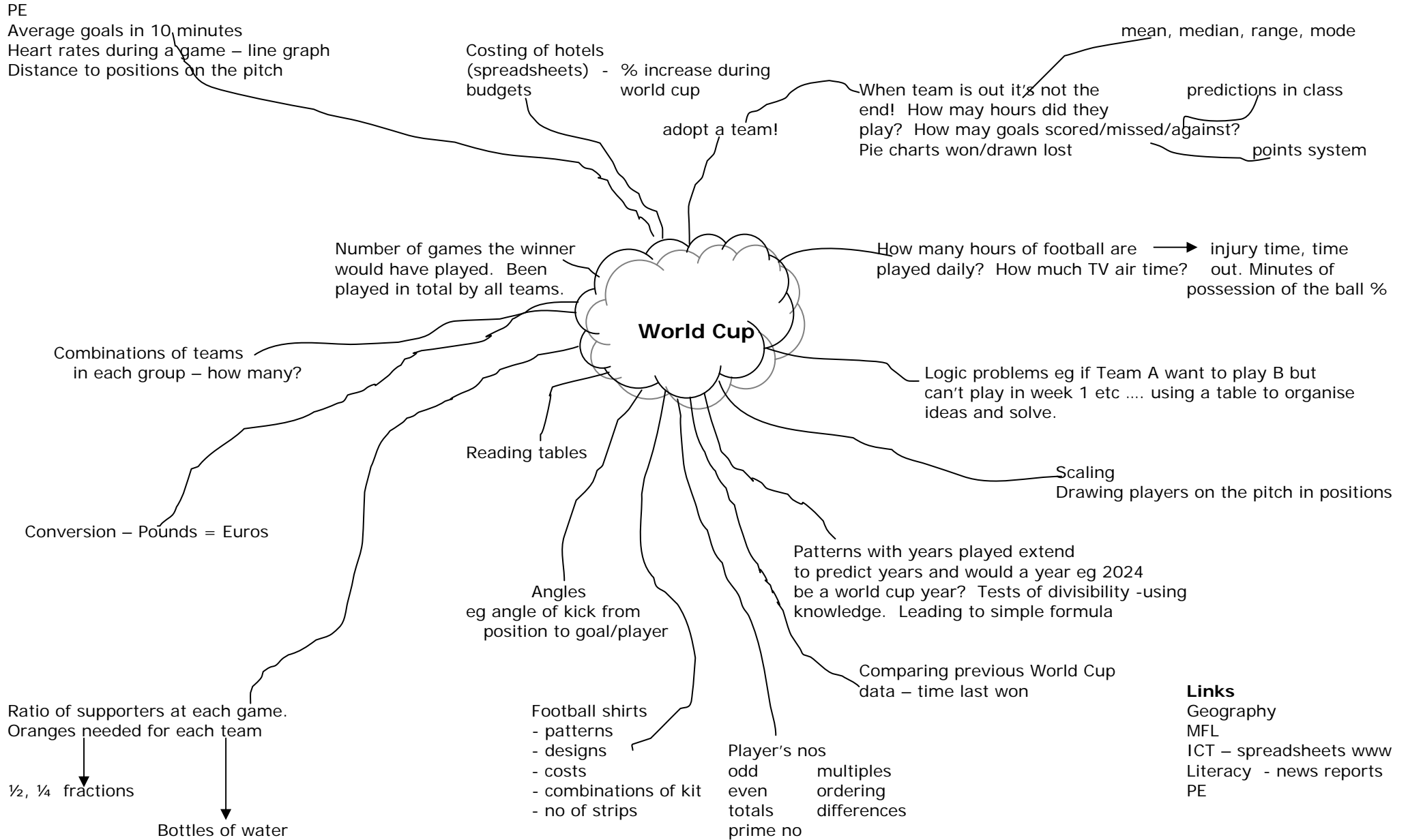
Foundation Stage and Key Stage One	Key Stage Two
<p>National Curriculum level/sub level and framework objectives</p> <p>Problem solving 2c – 2a 2c - With support, identify the mathematical knowledge and use it to solve problems. 2a – Independently, use prior mathematical knowledge to solve problems.</p> <p>Communication 2c – 2a 2c - Where appropriate, begin to use diagrammatic representations to solve problems. Explain what has been done orally or in writing with support. 2a – Begin to use diagrams and symbols more independently to solve problems, and explain what has been done orally and in writing where appropriate.</p> <p>Reasoning 2c, 2b 2c – Use examples of patterns in familiar contexts. 2b – Use examples of patterns in new contexts</p>	<p>National Curriculum level/sub/level and framework objectives</p>
<p>Activities and progression</p> <ul style="list-style-type: none"> • How many players can be on the pitch during 1 game? • How many players can be on the pitch during 2 games? • If 2 were injured, how many players would be waiting on the pitch?, etc • Can you (child) work out a word problem too? • 6 multilink formed into a rectangle for an ants' pitch... How many other shapes can you let the ants play on (with 6 multilink) • Draw a footballer on squared paper ... make one twice as tall. 	<p>Activities and progression</p>
<p>Assessment opportunities</p> <p>See sub levels</p>	<p>Assessment opportunities</p>
<p>Links to the wider curriculum</p> <p>Already there!</p>	<p>Links to the wider curriculum</p>

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Focus: World Cup – Logic (3)

Foundation Stage and Key Stage One	Key Stage Two
National Curriculum level/sub level and framework objectives	National Curriculum level/sub/level and framework objectives Reasoning – 3c Find examples that satisfy simple general statements. Begin to make some simple general statements of their own.
Activities and progression	Activities and progression <ul style="list-style-type: none"> • Matching teams to football strips (pictures) – all combinations – tops, shorts, socks • All possibilities – half-time scores given full time scores e.g. <ul style="list-style-type: none"> ○ Full-time 4-2 ○ Half time? 0-0; 1-1; 2-1etc • Question cards – digital photos of players – logic – work out player from logical clues • Logical clues about scores, attendance etc – pupils or teacher devise clues.
Assessment opportunities	Assessment opportunities
Links to the wider curriculum	Links to the wider curriculum

World Cup (4)



Links
 Geography
 MFL
 ICT – spreadsheets www
 Literacy - news reports
 PE

Developing Whole School Approaches to Problem Solving

Focus: World Cup (5)

Foundation Stage and Key Stage One	Key Stage Two
National Curriculum level/sub level and framework objectives	National Curriculum level/sub/level and framework objectives
Activities and progression	<p>Activities and progression</p> <ul style="list-style-type: none"> • Fantasy football maths (club) – Budget (£150 million) <ul style="list-style-type: none"> ○ Reassess after each game ○ Add up total team cost/ – difference between players x ÷ good results, bad results • 5 goals scored in a match – possible combinations 3 fold increase, 1/3 decrease. • Look at tables – calculate data • Order number on shirts/ order value of players • Time start – calculate time end (with additional stoppage time) • Time zones – if 8 o'clock here, what time there/vice versa • Frequency chart – graph of scores/players scores • Mean/mode/median – scores per team/player • Probability tree diagram. Handling data. • Scheduling matches – extra team joins each table – now reschedule
Assessment opportunities	Assessment opportunities
Links to the wider curriculum	Links to the wider curriculum

Focus: World Cup (6)

<p>Foundation Stage and Key Stage One</p>	<p>Key Stage Two</p>
<p>National Curriculum level/sub level and framework objectives</p>	<p>National Curriculum level/sub/level and framework objectives</p>
<p>Activities and progression</p>	<p>Activities and progression</p> <ul style="list-style-type: none"> • World Cup flags – rotation/symmetry/tessellation • Word problems – number of goals scored; group matches for number of teams • Shapes on a football field • Problems involving numbers on football shirts • Points awarded to teams for a win, draw, lose • Word problems on ticket prices • FIFA website <p>From separate sheet (activities devised by Year 5/6 children):</p> <ol style="list-style-type: none"> 1. Rotate, reflect and find lines of symmetry using the flags of the World Cup. 2. Word problems about different teams scoring goals e.g. if there are 8 groups and 4 teams in each group and 3 goals scored in each game: <ol style="list-style-type: none"> a) How many goals are scored in each group? b) How many goals are scored in 13 games? c) How many goals are scored in it altogether? 3. Data handling on goals scored by each country (using Excel) 4. This is one way of working out which team is going to win the World Cup. The last time Argentina won the World Cup was in 1986 and previous to that it was 1978. If you add 1978 and 1986 the answer is 3964. The last time Germany won the World Cup was in 1990, the time before that was in 1974. If you add these two figures the answer is 3964. Brazil last won the World Cup in 1994 and before that it was 1970. If you add these two figures the answer is 3964. BUT England last won the World Cup in 1966. If you add this figure to 1998 the answer is 3964. Unfortunately France won the World Cup in 1998. 5. How the matches are organised <ol style="list-style-type: none"> a) Divide the 32 countries into 8 groups. How many group matches does this make? b) How many matches are there altogether?
<p>Assessment opportunities</p>	<p>Assessment opportunities</p>
<p>Links to the wider curriculum</p>	<p>Links to the wider curriculum</p> <p>Flags of countries – link to geography Travel to the World Cup (between group matches)</p>