

PEG BOA

ACTIVITIES THAT EXPLORE LOGIC AND STRATEGIES

THEMA **UNDERSTANDING LOGIC & STRATEGIES**

PRODUCT GUIDE

IP 147759

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CATEGORIES OF ACTIVITIES:

- 'Nim' number activities
- **Movement activities** 2.
- 3.
- Capturing activities 'Tick Tack Toe' activities 4.
- **Puzzles**
- 6. Trapping activities

1 NIM ACTIVITIES

These are activities for 2 people and are based upon removal of peas from patterns.

The player who takes the last peg is always the loser.

- Place 10 pegs in a row across the board. Players in turn remove up to 3 pegs.
- **1b** Place as many pegs as you wish anywhere on the peg
 - Remove up to 3 pegs each turn.
- Place 30 pegs in 3 adjacent rows. In a turn a player can remove 1, 2 or 3 pegs from any

Loser takes the last peg as usual.

- **1d** Place 30 pegs in 3 adjacent rows. In a turn a player can remove any number of pegs from any one row. Loser takes the last peg. Try varying the number of rows.
- **1e** Place 10 pegs in a row. First player removes any one peg. Subsequent plays are made by removing one or any two adjacent pegs. Loser takes last peg.
- 1f Place 25 pegs on a 5 x 5 square, the colours do not

At each turn a player can remove any number of pegs that are in an unbroken line vertically or horizontally. A gap will generate two individual lines where only one part can be removed at a turn.

1 - variations

Try making the winner the person who takes the last

To avoid setting up each time start with an empty board and place pegs into the board using the inverse of each game.

Once set up, play the activity as above.

2 MOVEMENT ACTIVITIES

2a Link Up For two Arrange pegs in board as shown.

= peg colour A • peg colour B (out of bounds) 0

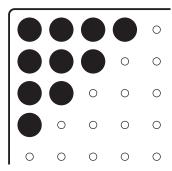
Players take turns moving their pegs verticaIly or

horizontally to make a straight line of 3 pegs.

This line can be vertical, horizontal or diagonal but pegs must adjacent.

First to achieve a line wins.

2b Chinese Chequers (Halma game) For 2, 3 or 4 people.



Each player chooses 10 pegs of one colour and places them in a corner as shown.

When two play, diagonally opposite corners are generally used. Each player attempts to cross the board diagonally and place all 10 pegs in the opposite trianqular corner formation first.

A peg can move:-

One space in any direction

b) By hopping over an adjacent peg provided that a space is available

Continued hops if other pegs and suitable spaces offer themselves.

3 CAPTURING ACTIVITIES

3a Stepping Stones For 2 people.

Choose colours and set up as shown (over). All moves are made diagonally one place or by jumping another peg.

Whenever an opponent's peg is jumped it is removed. Continuous jumps are permitted.

The winner is the player to remove all the opponent's peas. If 20 moves are made without a peg being removed the activity is drawn.

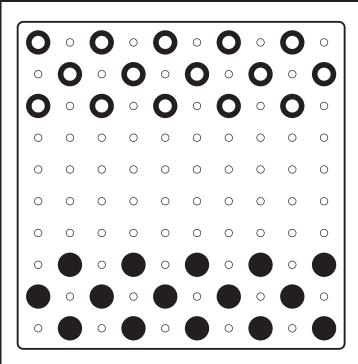
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Peg Board activities 2



3b Pawn Draughts For 2 players.

Place pegs as for Stepping Stones (above). Pegs can move diagonally forwards only.

Moves are made by moving one place or jumping over an opponent to an empty space beyond.

Jumped pegs are removed.

If after a jump a similar situation arises then further jumps may be made.

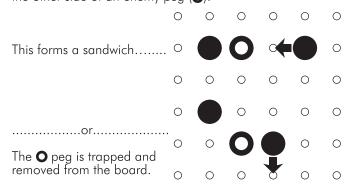
The winner is the player who gets most pegs to the other side of the board.

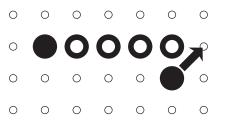
If equal numbers occur the winner is the player to have his pegs in position first.

3c Line Trap For 2 players.

Place peg board between players. Take 20 pegs to define the limits of play and place in 2nd row up from each end (10 each side). The players now choose 20 pegs each from the remaining colours and place these in the next two rows at each end of the board.

Battle will commence mainly in the 20 empty holes between the armies. Pegs can move sideways and forwards, directly or diagonally. No jumping is allowed. Capturing takes place by moving one of the pegs () to the other side of an enemy peg (\mathbf{O}) .





A number of enemy pegs can be trapped if your pegs can be placed at each end of the line. E.g. O would lose 4 pegs

from \(\bigcup 's move. \) The winner is the player to get most pegs across the board.

4 TICK TACK TOE ACTIVITIES

4a Tick Tack Toe

Use one corner of the board and using 7 pegs, isolate a 3 x 3 hole square in that corner. This is the playing area. Each player now chooses 5 pegs of a colour. Play is to alternate and the first player to produce a line of 3 pegs of their colour vertically, horizontally or diagonally is the winner. If neither player succeeds the activity is drawn.

4a variation 1 Pegs no longer belong to individual players. A player can place any colour of peg on the board at his turn. First to produce a line of three in his turn wins.

4a variation 2, 3 and 4 Each player has 3 pegs. These are placed alternatively, the centre hole must not be used until all pegs have been placed. After all pieces are placed the following occurs assuming that a line has not already been made.

4a variation 2 Pegs can move horizontally or vertically one space at a time.

4a variation 3 Pegs can move to any vacant hole at each turn.

4a variation 4 First player to make a line of 3 pegs loses. The previous variations can be added to this opposite system of playing.

4a variation 5 Place neutral pegs around a corner area 5 x 5 holes. Players now draw 12 pegs each. The activity of 3 in a row continues but is less confined. The winner is the player who has the larger number of lines of 3 after all the pegs have been placed. No gaps allowed between 3 winning pegs.

4a variation 6 Using the 25 holes 5 x 5 isolated area players score points dependant upon length of lines they make which are totaled at the end. Scores are 1 pt for a line of 3, 3pts for a line of 4, 5pts for a line of 5 pegs. Each player again has to place his 12 pegs before the winner is decided. Higher score wins.

Related activities

4b Line of Four For two players on the whole of the peg board. Agree on the number pegs each player will draw (say 20). Each player places a peg into the board until one player makes a line of 4 and wins. If all pegs have been placed and no line has resulted the activity is a draw.

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Peg Board activities 3

4b variation 1 Play all pegs and total number of lines of four. Winner has more lines.

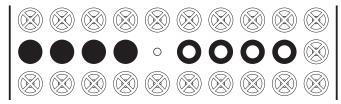
4c Five in a row (Pegitry) Played as a line of four but with the objective of scoring the first line of five in a row horizontally, vertically or diagonally. Gaps in the line are not accepted.

4d Swedish activity For 2 players. Isolate an area in a corner of 20 holes (5 \times 4) using 10 pegs of a neutral colour. Play will continue inside this playing area. Each player has 5 pegs of a chosen colour. The objective is to make a line of 4 pegs of your colour

first and win. Players place their pegs into the board alternatively. If no line has been made vertically, horizontally or diagonally then play continues in turn by moving any one of your 5 pegs to a vacant hole. This continues until one player makes a line of four.

5 PUZZLES

5a All change places Also known as "Lucas game" or "Frogs" or "Camels".

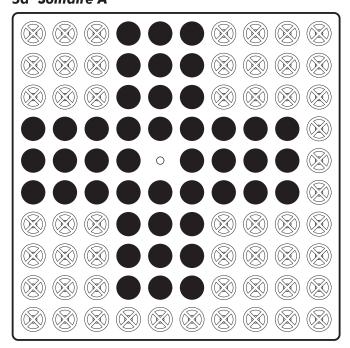


Arrange 8 pegs as shown.

These are the only spaces to be used i.e. the eight positions of the peas and the empty hole.

Pegs can move one space at a time or they can pass over a peg (but only one) of a different colour. Using only these moves, change the places of the two sets of pegs.

5a Solitaire A

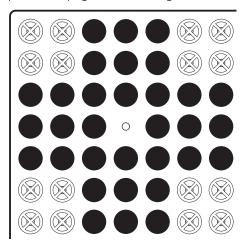


Place any colour of pegs into the holes to create the shown pattern (above). Leave the centre hole empty. The object is to remove all pegs but one and to finish with that peg in the centre hole. Moves are made by jumping over one peg either horizontally or vertically into the next hole and removing the jumped peg. If the next hole is occupied a jump cannot take place. No peg is allowed to go outside

the original pattern made by the pegs.

5h Solitaire B

Previous rules apply to this different arrangement (right). This version although less well known is believed to be the forerunner to Solitaire A.



30 31 32 33 34

35 36 37

5c **French** Solitaire

The peg holes have been numbered so that the various problems can be identified by the number rather than simply by patterns as before.

Activities where the centre peg (19) is removed.

5c variation 1 - Hub and Rim

Leave pegs 1, 2, 3, 8, 15, 22, 29, 34, 37, 36, 35, 30, 23, 16, 9, 4, i.e all the pegs around the edge and one central one.

5c variation 2 - St Andrew's Cross

Leave pegs 11, 13, 19, 25, 27 which make the cross.

5c variation 3 - Moline Cross

Leave pegs 1, 3, 6, 9, 12, 15, 17, 18, 20, 21, 23, 26, 29, 32, 35.

5c - other variations:-

Empty hole at 6, leave piece 32 Empty hole at 1, leave piece at 15 or 22 or 35

Empty hole at 26, leave piece at 28 or 36 Empty hole at 19, leave at 6 Empty hole at 3, leave piece at 37 Empty hole at 32, leave piece at 2

Empty hole at 6, leave piece at 3

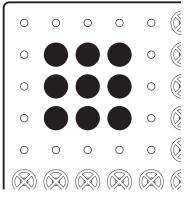
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5d How Many Moves



Take 11 pegs of one colour and isolate at one corner a 5 x 5 hole area.

Place in the centre of this 9 pegs of a different colour marked

in diagram.

The object is to remove 8 of the 9 pegs in the smallest number of moves

Pegs can move; vertically, horizontally or diagonally (one space,

one move), over another peg, horizontally or diagonally or vertically (one move), or in continuous jumps (one move). Each time a peg is jumped it is removed. All moves take place in 25 hole area.

5d variation Try changing the position or shape of the pegs, or even the starting area.

6 TRAPPING ACTIVITIES

Each of these activities is based upon the idea of one person, with a larger number of pegs, trying to trap the opponent who has one peg only. The solitary peg has however greater power. A mistake by the solitary hunted peg may cause it to be trapped, but a mistake by the hunting pegs may cause some to be removed and make the task of trapping impossible.

6a Hare and Hounds A

Isolate an area of 25 holes (5×5) - this is the playing area.

Decide upon the role of hunter (hounds) and hunted (hare). The 12 hounds start in the position marked with \mathbf{O} 's.

The hare starts in the centre hole of the board (●). Hounds can only move down and across, never

backwards, forwards or sideways. Decide who will start then play continues

alternately.
If the hare can leap over and land directly behind a hound peg then that peg is removed.

0

0

0

0

0

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0

If further leaps are possible the hare is at liberty to take them.

If the hounds cannot capture the hare, the hare wins.

6b Hare and Hounds B

Set out as in the first activity, but now both hare and hounds can move diagonally.

If a player becomes very proficient at playing the hounds,

then let the opponent have another hare and try to catch them both.

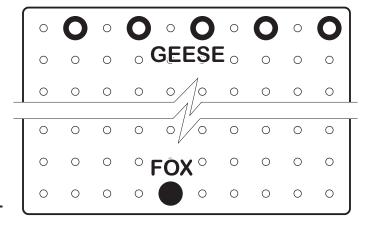
If the hounds always lose try adding another one or more to the pack.

6c Fox and Geese A

One player selects 5 pegs of one colour and these are the geese

The opponent, the fox has one peg only.

Note the starting positions at opposite ends of the peg board (below).



The geese must always move diagonally forward one hole at a time.

The fox can move backwards diagonally and forwards and attempts to get through the line of geese.

If the fox can get behind the geese he wins.

If the geese trap the fox the geese win.

6d Fox and Geese B

15 Geese against one fox.

Place pegs in opposite ends of the board as shown below. Geese as before can only move diagonally forward. The fox can move diagonally forwards or backwards, but has the additional power of being able to jump over and remove any goose that has a space on the other side. If the geese trap the fox they win, if the fox can avoid capture he wins.

