Using Roamer

VALIANT

A Valiant Technology Ltd Publication

Written by Kate Hudson
Illustrated by Malcolm Livingstone

www.valiant-technology.com

with the under 5s

IMPORTANT INFORMATION

Dear Colleague

This is a summary of useful information for Nursery teachers. It should not replace reading the information in the User Guide.

1 Demonstration Program – Whenever you turn on Roamer the demonstration program is available for use. Simply press GO and Roamer will move in a triangular shape whilst demonstrating its functions. This program can be used for a variety of activities with Nursery children.

2 Cancelling Memory – The CM button needs to be pressed twice to clear Roamer's memory. Make children listen to the two different sounds, so they can hear that they have cleared Roamer's memory correctly. If CM is pressed only once Roamer will not "forget" and will continue to do what has been previously programmed. This can cause confusion in small children.

3 Roamer Units (Forwards and Backwards) – Roamer moves in units of its own body length (30cm). This is an easy unit for young children to visualise and it also corresponds to a child's footstep. This makes pacing out for estimation fairly accurate. It is better to use Roamer on the floor since this allows children to use "body geometry" when working out Roamer programs. This is a powerful method of aiding understanding. Alternatively, if you have floor tiles, you can change the Roamer units to correspond to their length. To do this press the following:

 [no. of centimetres required eg.50] GO

Whilst you can change Roamer units to work on a table top, it is not recommended for this age group.

4 Roamer Units (Turning) – Roamer turns in degrees. This is very useful for older children but too difficult for younger ones. It is advised that you change the unit of turn to a more appropriate one for this age group. To get Roamer to turn in right angles simply press the following:

 [90] GO.

This unit will be retained even when CM CM has been pressed. It is lost if the Roamer is turned off. I suggest that if you have changed the unit you put a piece of sticky tape over the on/off switch to stop the children turning it off accidentally.

5 Working in Groups – Roamer is ideal for developing cooperative learning skills. Its motivational power is so great that even the most retiring child will be eager to join in. The activities in this booklet range from whole class to small group activities.

6 Recommended Accessories

Roamer Playing Cards – These are extremely useful for young children and can be used both for a variety of activities and as a means of recording programs that the children have put into Roamer.

Roamer Jackets – These can be used to personalise Roamer. Each group of children could create their own Roamer character, then when they use Roamer they can put on their jacket and it immediately becomes their own "pet".

Pen Pack – This pack enables Roamer to leave a trail. It helps children

see where Roamer has been and helps them draw shapes. Not only can a pen be put down the centre of Roamer but the attachments in this pack allow pens to be fitted to the outside edge.

Roamer Mats – Simply jigsaw these brightly coloured mats together to create a variety of pathways for Roamer to follow or a plain running surface. Or use the multi-activity or clear mat.

Nursery Rhyme Pack – Using popular nursery rhymes as the basis of Roamer activities this photocopiable resource is tied in to the Early Learning Goals.

I am sure that your children will have many happy hours learning with Roamer. This booklet is intended to provide starting activities that will form the groundwork and develop basic skills on which to build.

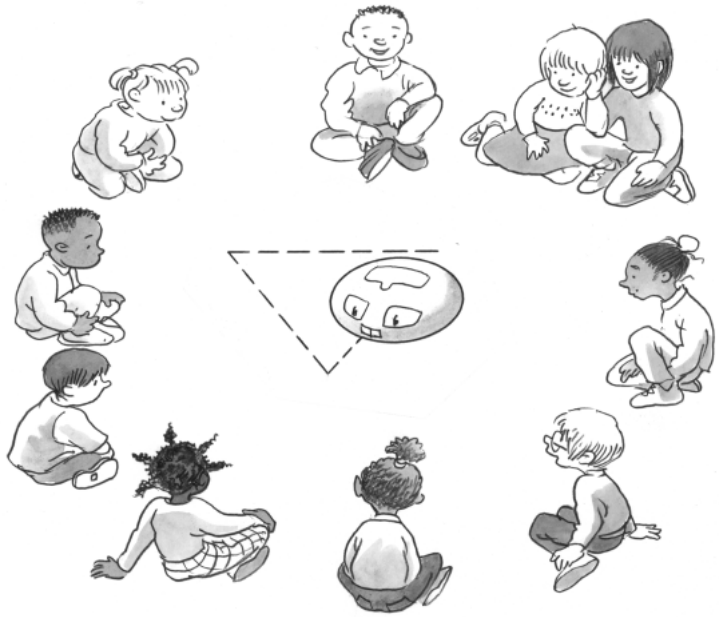
If you have any queries about using Roamer with your children, please phone me on 020-8673 2233 or email me on info@valiant-technology.com and I will be glad to help.

Kate Hudson

Kate Hudson
Customer Services

1 Introducing Roamer

Sit the children in a circle, place Roamer in the centre and ask them to watch what Roamer does. Turn Roamer on and press GO.

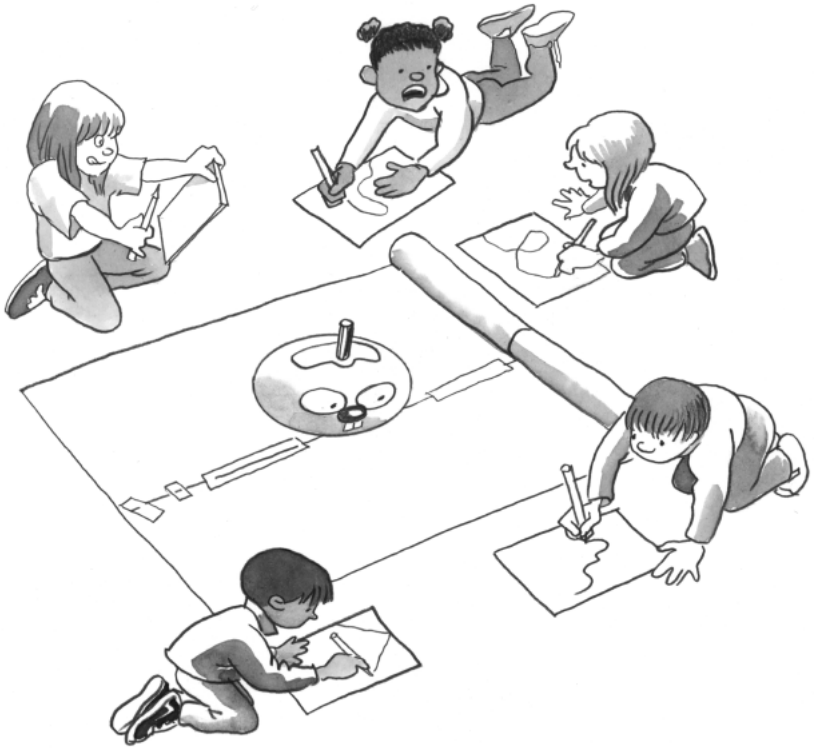


Once Roamer has performed ask the children to describe its actions. "Which way did Roamer go first?" "How far?" "Which way did Roamer turn?" "How far did it turn?" "Were all the notes the same?" "Were they the same length?" "How long did Roamer stop for?"

This activity develops language in a mathematical context. Children are learning to describe movement in a variety of ways and are being introduced to the idea of measurement. Everything can be measured and the units chosen can be quite arbitrary or standard. It is also a valuable activity in getting children to record mentally and then talk about what they have seen.

2 Draw the route

Press GO again so the children can confirm what they have seen. Give each child a piece of paper and ask them to draw the route that they think Roamer is following.

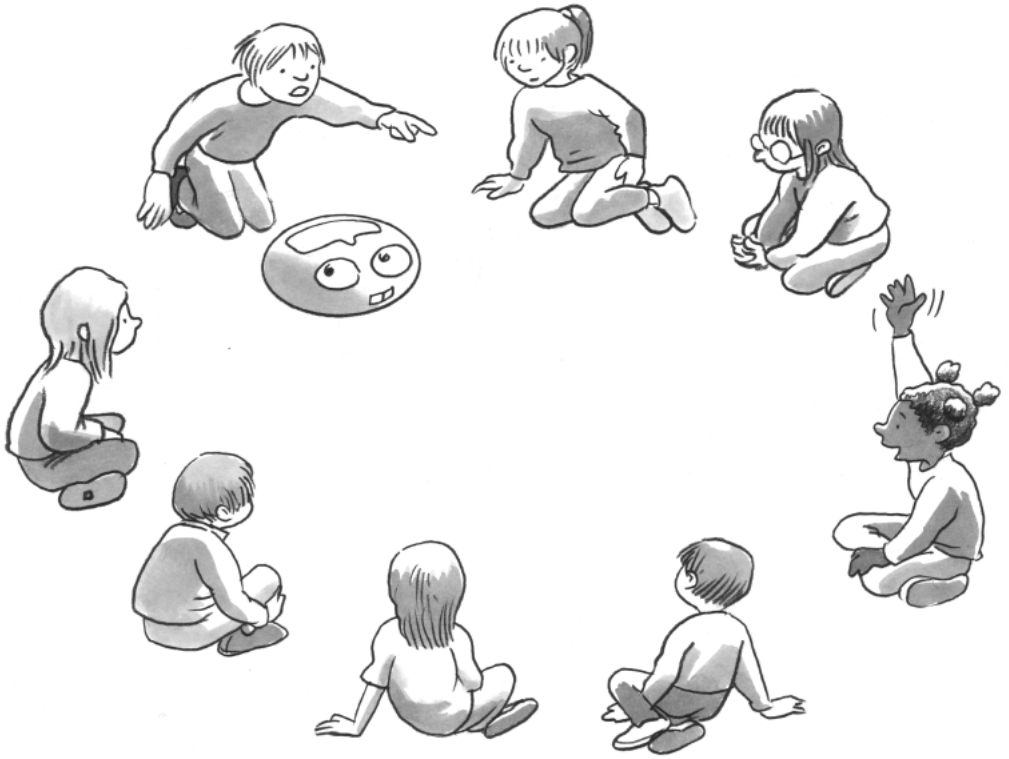


Put a pen down the centre of Roamer, press GO, and watch Roamer draw its trail. (Note: place card under Roamer for it to draw on.) See how it compares with the drawings the children have done.

Mentally moving information from one place to another is an important skill for children to learn (eg. looking up at a blackboard and then writing on paper). This is quite a difficult activity for some children so you may want to let them draw their diagram as Roamer draws hers. It is the beginning of hand-eye coordination and understanding shape and space.

3 Who will Roamer visit?

Place Roamer in front of one child and ask who they think Roamer will visit when they press GO. You could use the shape that Roamer has drawn as a prompt if needed.



This activity concentrates on estimating direction and measurement. Repeat this activity many times.

Starting to program Roamer
– Forwards and Backwards

To get rid of the demonstration program press CM CM. Roamer is now ready to be programmed.

In all the following activities it is important to clear the memory each time before programming Roamer.

1 What is 1 unit?

Sit the class in a circle, place Roamer in the centre. Show how to clear the memory and program Roamer:

(If you have the playing cards you can lay out the appropriate cards for them to see which buttons you're pressing.)

Place a marker at the back of Roamer, press GO and once Roamer has completed its program, place another marker at the back of Roamer. Remove Roamer so they can see what 1 unit is. Place Roamer between the two markers so they can see that 1 unit = 1 Roamer.

Repeat this exercise asking different children to place the second marker where they think Roamer will stop. Try starting at different locations so that they are not using a bit of fluff on the carpet or some such oddity to judge the distance but are really having to visualise a Roamer unit.

This exercise is crucial to begin estimating correctly. In order to understand measurement children need to know what unit is being used and for estimation they need to be able to visualise the unit.

2 Let's GO

Class still sitting in a circle. Place Roamer in front of a child and ask who they would like to send it to. Point Roamer in the right direction and ask them to estimate the distance. At this point pacing out is very helpful. As the child paces it out the others can count the steps. Program the Roamer accordingly.

Repeat this activity many times. The more lopsided the circle, the greater the variety of numbers used.

Number can be understood in three different ways – as defining a thing's position in a series (its ordinal nature) as a quantity (its cardinal nature) and as a symbol (number recognition). This exercise combines all these elements forming a good basis for understanding number. By pacing out and counting, children will appreciate the order of number. In order to program Roamer correctly the child has to understand the symbols for number: the distance represents the cardinal nature of number.

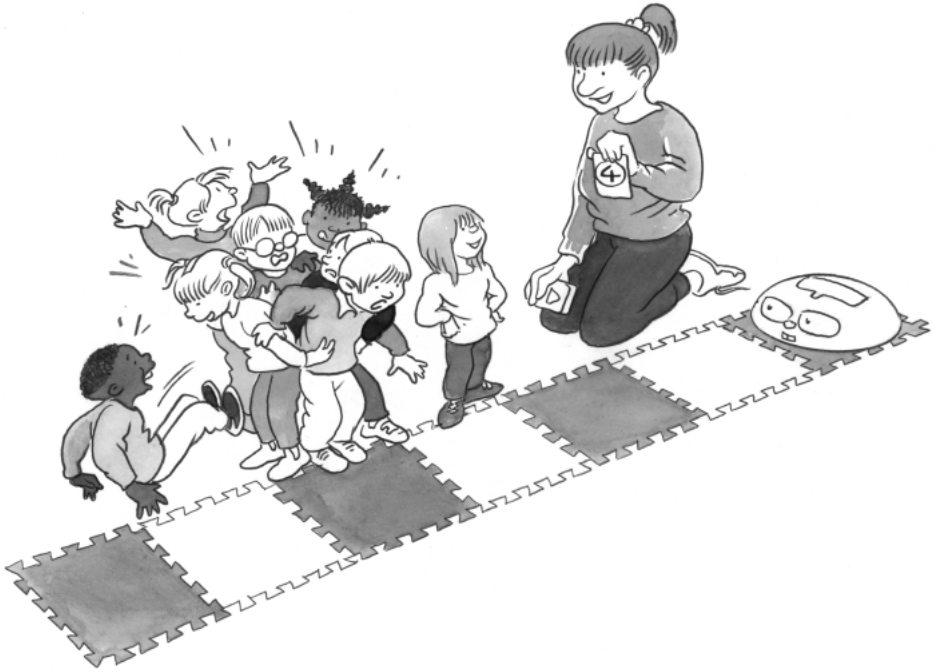
3 Tunnel

Get the children to stand in a line and make a tunnel with their legs. The first child has to program Roamer to go all the way through the tunnel. This can be repeated with the children standing closer together and further apart to vary the length of the tunnel. See if they remember to pace it out first for estimating.

Children love this estimating activity and it provides a great opportunity to develop mathematical ideas such as before, after longer than, shorter than, etc.

4 Where will Roamer stop?

This activity can be done either in small groups or as a whole class activity with the children divided into teams.



Mark a box on the floor within which Roamer will be placed. Choose a number (pick a Roamer playing card or throw a dice) and ask the children where they think Roamer will stop if you program it to go forward this number of units. If the children are playing individually they can stand where they think it will stop, if they are playing in teams one person from each team should stand where the team thinks it should stop.

Once again the main feature of this activity is estimation and understanding number. It will also provide ample opportunity for language development, particularly if the children are working cooperatively in groups.

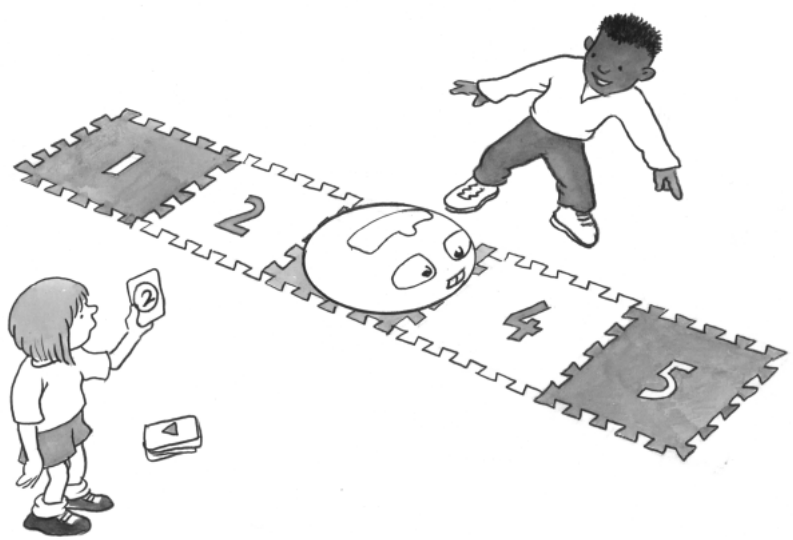
5 Back 1

You can now introduce programming Roamer to go backwards. Once again, show Roamer going back 1 so the children can visualise the unit; then repeat the above game going backwards instead of forwards.

Introducing backwards movement is obviously important in terms of space and shape but it can also provide a foundation for understanding subtraction later on.

6 Introducing addition

Create a number line (the Roamer floor mats are wonderful for this purpose or it can be chalked on the floor). Using only the numbers up to five from the Roamer playing cards or alternative, pick a card and program Roamer to go up the number line. Leave Roamer where it is and pick another card. Ask children where they think Roamer will stop when you put in the new number.



NOTE: Remember to clear Roamer's memory (CM CM) before reprogramming with the second number.

This activity clearly introduces the idea of addition and the language involved.

7 Introducing subtraction

Once again start by selecting a card and programming Roamer to go up the number line. Select a second card, and this time ask the children where Roamer will stop if it goes backwards by this number.

This introduces subtraction and will help develop the associated language.

8 What will Roamer do?

Using the Roamer playing cards or similar select the forwards and backwards cards, shuffle and place face downwards in a pile. Select all the number cards, shuffle and place face downwards in a second pile.

One child should take a card from each pile. They must put the cards down in an order that Roamer will understand. Before programming Roamer they should say where they think Roamer will stop. Then they can program Roamer and see how accurate their estimation was.

Then the next child repeats this activity starting with Roamer where the last child left it.

This is a wonderful reinforcement exercise on number operations. It provides plenty of opportunity for language development.

Before programming the Roamer it is a good idea to introduce the concept of turning and direction of turn without the robot.

1 Turning pairs

Select all the Turning cards from the Roamer Playing Cards or similar. Shuffle them and place them face down randomly on the table. Each child should take it in turns to turn over two. If they are the same they can keep them and turn over another two. If they do not match they must turn them back and the next child takes their turn.

Although there are only two directions of turn represented - right and left - because the cards sometimes come out upside down, this activity is not as simple as it seems. Using body geometry helps enormously with turning and understanding left and right.

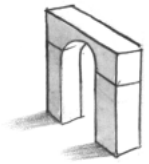
2 Turning

Change the unit of turn on Roamer (see Important Information).
Demonstrate  1 GO and then  1 GO.

Place Turning cards in one pile face down and Number cards up to 4 in another. Put a different object at each of the 90 degree points round Roamer.

Each child, in turn, can pick one Turning card and one Number card and program Roamer accordingly. They should say which object they think Roamer will stop at before pressing GO.

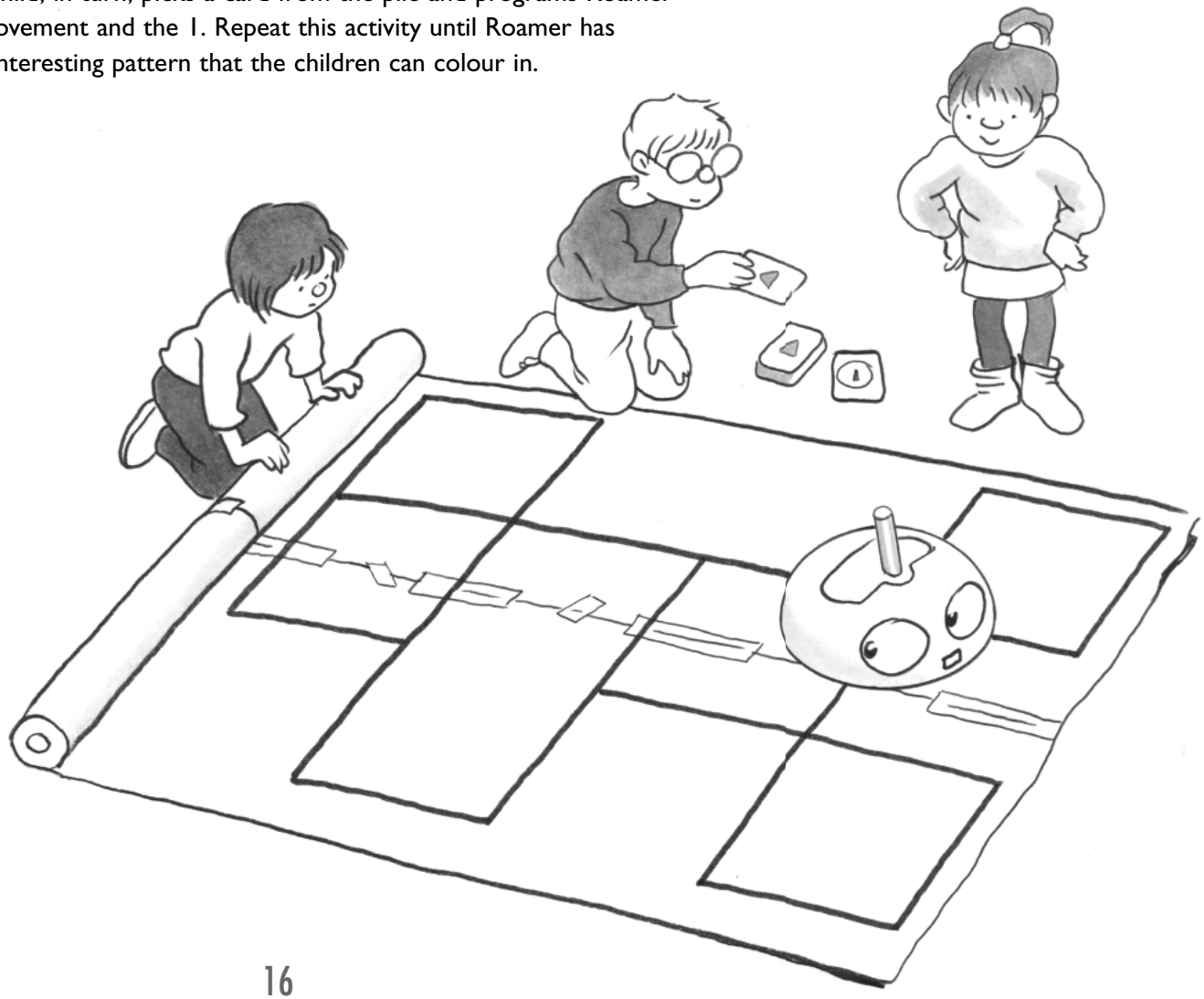
Angles can be understood either as a turning movement between two points or as a measurement. This activity expresses the first idea and helps reinforce direction of turn.



3 Modern art

Place a pen down the centre of Roamer and work on a large area of paper (the back of a roll of wallpaper is ideal). Select all the Movement cards (forwards, backwards, right and left) and place them face down in a pile. Place a 1 face up next to them.

Then each child, in turn, picks a card from the pile and programs Roamer with that movement and the 1. Repeat this activity until Roamer has created an interesting pattern that the children can colour in.



This activity introduces the idea of angles as a measurement because the children can see the angles that are created. It is a great activity for reinforcing the concepts of shape and space and of course, when it comes to colouring in, it helps develop fine motor control.

Roamer Music

Young children really love Roamer's musical capability. It allows them to create music without having to learn an instrument. The following are a selection of Nursery Rhymes.

This Old Man

♪48 ♪45 ♪88
♪48 ♪45 ♪88
♪410 ♪48 ♪46 ♪45
♪43 ♪45 ♪46 ♪25 ♪26
♪48 ♪41 ♪21 ♪21 ♪41
♪21 ♪23 ♪25 ♪26 ♪88
♪48 ♪43 ♪43 ♪46
♪45 ♪43 ♪81

Little Bo Peep

♪26 ♪26 ♪26 ♪46 ♪26 ♪48 ♪28 ♪48
♪28 ♪210 ♪211 ♪213 ♪213 ♪211 ♪210 ♪610 ♪68 ♪213 ♪210
♪210 ♪410 ♪210 ♪411 ♪28 ♪68
♪210 ♪211 ♪210 ♪28 ♪26 ♪28 ♪66 ♪66

Hickory Dickory Dock

♪25 ♪26 ♪28 ♪28 ♪210 ♪212 ♪813
♪25 ♪45 ♪28 ♪28 ♪210 ♪212 ♪813
♪28 ♪413 ♪213 ♪412 ♪212 ♪410 ♪210 ♪68
♪28 ♪210 ♪28 ♪26 ♪25 ♪23 ♪81

Hot Cross Buns

♪313 ♪31 ♪56
♪313 ♪31 ♪56
♪213 ♪211 ♪210 ♪28 ♪26 ♪28 ♪210 ♪211 ♪313 ♪31 ♪56
♪213 ♪213 ♪213 ♪213 ♪311 ♪311
♪210 ♪210 ♪210 ♪210 ♪58
♪213 ♪211 ♪210 ♪28 ♪26 ♪28 ♪210 ♪211
♪313 ♪31 ♪56

Twinkle Twinkle Little Star

♪34 ♪34 ♪311 ♪311 ♪313 ♪313 ♪511
♪39 ♪39 ♪38 ♪38 ♪36 ♪36 ♪54
♪311 ♪311 ♪39 ♪39 ♪38 ♪38 ♪56
♪311 ♪311 ♪39 ♪39 ♪38 ♪38 ♪56
♪34 ♪34 ♪311 ♪311 ♪313 ♪313 ♪511
♪39 ♪39 ♪38 ♪38 ♪36 ♪36 ♪54

Three Blind Mice

♪35 ♪33 ♪61
♪35 ♪33 ♪61
♪38 ♪26 ♪16 ♪55
♪38 ♪26 ♪16 ♪55
♪18 ♪213 ♪113 ♪112 ♪110 ♪112 ♪213 ♪18 ♪28 ♪18 ♪113 ♪113
♪113 ♪112 ♪110 ♪112 ♪213 ♪18 ♪18 ♪18 ♪18 ♪213 ♪113 ♪112
♪110 ♪112 ♪113 ♪18 ♪18 ♪28 ♪16 ♪35 ♪33 ♪61