

Decimal Cards Lesson Plan

Purpose: The purpose of this material is to help the child become familiar with the symbols of the decimal system. This work is usually begun after the child has had experience working with concrete/hands-on decimal system materials like the golden beads.

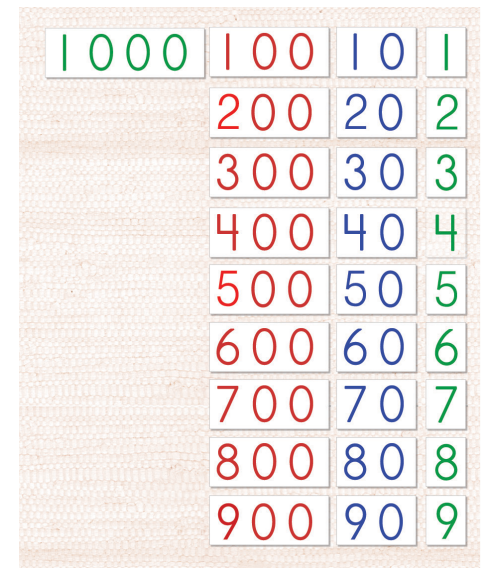
Presentation: Introductory Tray

1. Invite a child to do the work with you. Bring the introductory tray to your work area.
2. Place your left hand on the 10 to stabilize it and use your right hand to carefully lift the 1 card out of the tray. Place it on the rug to the front right of the tray.
3. Ask the child, "What's this." They should say one and you can say, "That's right. It is one unit, one unit." Encourage the child to say it.
4. Carefully lift the 10 out of the tray and place it just to the left of the 1. Ask, "What's this?" They should answer ten and you say, "That's right. This is one ten. How many zeros does one 10 have?" Have the child touch the zero.
5. Take the 100 and place it just to the left of the 10. Say, "This is one hundred. It has two zeros. Let's count the zeros." Help the child touch the zeros and count them.
6. Take the 1000 and place it just to the left of the 100. Say, "This is one thousand. It has three zeros. Count the zeros." Have the child touch the zeros.
7. Review the names of each and continue the 3-period lesson (but don't mix up the cards! Keep them in hierarchical order but move them forward and backwards on the table.) See maitrilearning.com for details on the 3-period lesson.
8. Say, "Show me the 100. Count how many zeros are in 100." etc.
9. Ask, "What is this? How many zeros?" Do it for each card several times until you're sure the child knows it.
10. Say, "Let's put these away so carefully. We always put the biggest number away first." Guide the child to put the 1000 away, then the 100, then the 10, then the 1. Demonstrate how they align in the right corner so it reads 1111 in the tray.
11. Go with the child to return the cards to the child's shelf. Free the child to work with the cards again whenever they like or tell them you'll do them together again another time.



Activity #1: 1999 Cards

1. Begin the lesson. Go together to get the full set of decimal cards (1-9999) and bring it to your work rug.
2. Place the card tray in front of you on the rug. Carefully lift the 1 out of the tray and place it on the top right corner of the rug. Say, "one unit" as you do so. Continue for the rest of the units, naming each one (e.g., two units, three units). Have the child step in and take over after you do a few.
3. Carefully lift the 10 out of the tray and place it just to the left of the 1 card. Say, "One ten" as you do so. Continue for the rest of the 10s, naming each one (e.g., two tens, three tens). Have the child step in and take over after you do a few.
4. Repeat for the 100s (just to the left of the 10s) and the 1000 (just to the left of the 100s). Leave the remaining thousand cards in the box.
5. Cover the box or turn the cards face down to isolate the cards you are working on. Move it to the top left of the rug.
6. Continue the 3-period lesson. Point to a card and ask, "What's this?" For 10s and higher, also ask, "How many zeros?" Have the child touch and count the zeros. Do this until you're sure the child knows all the numbers. Read the categories from top to bottom and bottom to top.



7. Have the child pick up certain cards and put them back. Repeat as much as the child likes and keep it interesting.
8. Say, "Let's put these away so carefully. We always start with the biggest number first."
9. Pick up the 1000 card and place it in the box. Say, "One thousand" as you do so. Continue for the 900 and then guide the child to step in, saying the name of each card as you put it away.
10. Repeat for the 10s and 1s, being sure to align the cards on the right of the tray so they read 1111 when you are finished.
11. Go with the child to return the cards to the child's shelf. Free the child to work with the cards again whenever they like or tell them you'll do them together again another time.

Activity #2: 9999 Layout, get one hierarchy

1. Begin the lesson. Invite two or three children to do some work with you. Have each child lay out their own set of decimal cards, each on their own rug (lay out just as in Activity #1 but this includes 1000 to 9000).
2. Have the children each bring their own tray and sit with you at a separate work rug across the room.
3. Say, "Joaquin, let's go get the card that says three units. What will we get?" Have everyone repeat three units. "Let's all go to his rug to see how we do it." Walk together to Joaquin's rug, place his tray on his rug, find the card, place it on Joaquin's tray, and bring it back to the group's work rug.
4. Place Joaquin's tray on the work rug, take the card off of Joaquin's tray, and place the card on the rug. Ask, "What did we bring?" Guide them to say three units. Say, "That's just what we wanted! Let's put it back so carefully and then we'll do some more. Everyone come and see how we do it."
5. Put the card back on the tray. Go together with Joaquin and model placing the tray on the rug, taking the card off the tray, placing it back in its spot, and then bringing the tray back to the group's work rug.
6. Say, "Daisy, you bring six tens. What will you bring?" Have the child tell you the number before they set off. "Kyle, you bring seven hundreds. What will you bring?" Have Kyle tell you before he sets off. Continue for all children while you remain at the empty rug.
7. When they return, have them place their tray on the rug then take the card off of their tray, place it on the rug and say what it is. Then, guide them to carefully put it away and come back for another one. Remember to count the zeros.
8. Guide each child to clean up their own cards by putting the largest card away first (9000).
9. Go with the child to return the cards to the child's work area. Free the child to work with the cards again whenever they like or tell them you'll do them together again another time.



Activity #3: Get two hierarchies

1. This may proceed directly from Activity #2 on the same day if the child is ready. Begin as in Activity #2 but ask the child to bring two hierarchies at once (e.g., five hundreds and three tens). Always state the largest thing first and have the child repeat back what they are going to bring before leaving the work rug. (Don't say fifty-two but say five tens and two units. They will substitute the correct vocabulary once they know it.)
2. When they bring the cards to you, have them place their tray on the rug and place their cards on the rug. Guide them to read the names of each one starting with the largest number. Then slide the cards together and read it again. Give several children numbers in turn so they are all actively seeking/bringing cards.
3. Complete the lesson as above.

Activity #4: Get three hierarchies

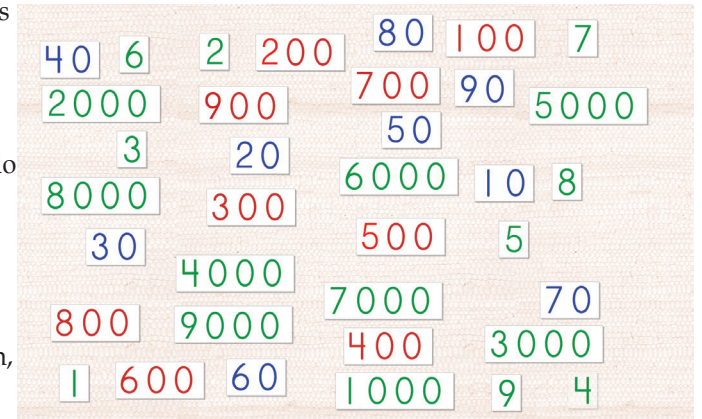
1. Repeat as in Activity #3 but ask them to bring three hierarchies to the rug (e.g., four thousands, five hundreds, and six tens).

Activity #5: Get four hierarchies

1. Repeat as in Activity #4 but ask them to bring four hierarchies to the rug (e.g., seven thousands, two hundreds, four tens, and eight units).

Activity #6: Get mixed cards

1. Begin the lesson and invite one child to work with you. Ask them to bring one container of decimal cards to your work rug.
2. Say, "Today we're going to do something really fun with these cards. We are going to randomize them on the rug!"
3. Pick up the 1 and place it anywhere. Pick up the 2 and place it randomly on the rug. Guide the child to do the rest until all cards are placed randomly on the work rug. All cards must be visible (e.g., not partially beneath another card) and should be oriented to the same perspective, not askew.
4. Proceed as in Activity #5 but have the child retrieve the cards from the randomized card rug, doing as many hierarchies as is appropriate for that child.
5. When they are finished, help them clean up by guiding them to find the largest number first (9000). Then, the largest number that is left on the rug (8000).
6. Complete the lesson as above.



Accommodations

- 9999 Layout: Take only three of each hierarchy out of the container. Work with this smaller quantity of cards until the child is successful. Then, increase to four, five, or six of each hierarchy. Follow the child's growing ability so they have just enough of a challenge to keep it interesting but not so much that they can't succeed.
- Working Memory Challenges: If the child is unable to bring more than two categories at a time, try to make patterns in the numbers that might help (e.g., 333 or 234). You can also continue to do two categories at a time but from randomized cards. If the child clearly understands the symbols and their names but is limited by working memory, don't hold him back. Move ahead to form complex numbers with beads and cards but do not drop this work. Regularly try to stretch the child's working memory capacity by adding one more thing.
- If children are slow in progressing, ask them to be the one who dictates the quantities the other children must bring. Help them to do only two or three things at a time as appropriate for the children they are working with. If they need it, you can sit next to them and whisper in their ear the quantity for each child. Collaborate with them to determine the assigned number...find a way to get them joyfully involved in the work most days.

Notes:

- The decimal card work is happening in tandem with the bead work but the bead work must always come first (concrete before abstract/symbol). So, you can present the 1111 card tray after the child has experience with the 1111 bead tray. Present the 9999 card layout after the child has worked several times with the 1999 bead layout. Do not jump to the symbol too soon!
- You may proceed in the same day from one to two, three, or four hierarchies depending on the abilities of the child. Give them just enough of a challenge to keep it interesting but not so much that they fail. =
- Encourage repetition by guiding the children to dictate to each other the quantities each must bring; you can give them parameters by saying "Do two at a time" or "Do three at a time." Experiment and see what your children can handle.