

TARJETAS NUMÉRICAS ADIVINATORIAS

Una manera entretenida de hacer que el alumnado haga cálculo mental puede ser mediante este juego matemático para adivinar el número que ha pensado otra persona de entre los que se encuentran en unas tarjetas.

2	3	6	7	10	11	14	15
18	19	22	23	26	27	30	31
34	35	38	39	42	43	46	47
50	51	54	55	58	59	62	63

Para ello debe pedirle a alguien que le diga en qué tarjeta está el número que está pensando.

A continuación tiene que sumar el primer número que aparece en cada una de las tarjetas que le han señalado, y la suma es el número. Por ejemplo supongamos que pensamos el 21

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td><td>11</td><td>13</td><td>15</td></tr> <tr><td>17</td><td>19</td><td>21</td><td>23</td><td>25</td><td>27</td><td>29</td><td>31</td></tr> <tr><td>33</td><td>35</td><td>37</td><td>39</td><td>41</td><td>43</td><td>45</td><td>47</td></tr> <tr><td>49</td><td>51</td><td>53</td><td>55</td><td>57</td><td>59</td><td>61</td><td>63</td></tr> </table>	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>2</td><td>3</td><td>6</td><td>7</td><td>10</td><td>11</td><td>14</td><td>15</td></tr> <tr><td>18</td><td>19</td><td>22</td><td>23</td><td>26</td><td>27</td><td>30</td><td>31</td></tr> <tr><td>34</td><td>35</td><td>38</td><td>39</td><td>42</td><td>43</td><td>46</td><td>47</td></tr> <tr><td>50</td><td>51</td><td>54</td><td>55</td><td>58</td><td>59</td><td>62</td><td>63</td></tr> </table>	2	3	6	7	10	11	14	15	18	19	22	23	26	27	30	31	34	35	38	39	42	43	46	47	50	51	54	55	58	59	62	63	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>20</td><td>21</td><td>22</td><td>23</td><td>28</td><td>29</td><td>30</td><td>31</td></tr> <tr><td>36</td><td>37</td><td>38</td><td>39</td><td>44</td><td>45</td><td>46</td><td>47</td></tr> <tr><td>52</td><td>53</td><td>54</td><td>55</td><td>60</td><td>61</td><td>62</td><td>63</td></tr> </table>	4	5	6	7	12	13	14	15	20	21	22	23	28	29	30	31	36	37	38	39	44	45	46	47	52	53	54	55	60	61	62	63
1	3	5	7	9	11	13	15																																																																																											
17	19	21	23	25	27	29	31																																																																																											
33	35	37	39	41	43	45	47																																																																																											
49	51	53	55	57	59	61	63																																																																																											
2	3	6	7	10	11	14	15																																																																																											
18	19	22	23	26	27	30	31																																																																																											
34	35	38	39	42	43	46	47																																																																																											
50	51	54	55	58	59	62	63																																																																																											
4	5	6	7	12	13	14	15																																																																																											
20	21	22	23	28	29	30	31																																																																																											
36	37	38	39	44	45	46	47																																																																																											
52	53	54	55	60	61	62	63																																																																																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr> <tr><td>40</td><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td></tr> <tr><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td><td>61</td><td>62</td><td>63</td></tr> </table>	8	9	10	11	12	13	14	15	24	25	26	27	28	29	30	31	40	41	42	43	44	45	46	47	56	57	58	59	60	61	62	63	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr> <tr><td>48</td><td>49</td><td>50</td><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td></tr> <tr><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td><td>61</td><td>62</td><td>63</td></tr> </table>	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td></tr> <tr><td>40</td><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td></tr> <tr><td>48</td><td>49</td><td>50</td><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td></tr> <tr><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td><td>61</td><td>62</td><td>63</td></tr> </table>	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
8	9	10	11	12	13	14	15																																																																																											
24	25	26	27	28	29	30	31																																																																																											
40	41	42	43	44	45	46	47																																																																																											
56	57	58	59	60	61	62	63																																																																																											
16	17	18	19	20	21	22	23																																																																																											
24	25	26	27	28	29	30	31																																																																																											
48	49	50	51	52	53	54	55																																																																																											
56	57	58	59	60	61	62	63																																																																																											
32	33	34	35	36	37	38	39																																																																																											
40	41	42	43	44	45	46	47																																																																																											
48	49	50	51	52	53	54	55																																																																																											
56	57	58	59	60	61	62	63																																																																																											

Cómo podemos comprobar se encuentra en la tarjeta azul, en la roja y en la negra. Tendríamos que sumar mentalmente el $4 + 16 + 1$ que da 21.

Otros modelos de tarjetas pueden ser:

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="6">Tarjeta 0</th></tr> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td><td>11</td></tr> <tr><td>13</td><td>15</td><td>17</td><td>19</td><td>21</td><td>23</td></tr> <tr><td>25</td><td>27</td><td>29</td><td>31</td><td>33</td><td>35</td></tr> <tr><td>37</td><td>39</td><td>41</td><td>43</td><td>45</td><td>47</td></tr> <tr><td>49</td><td>51</td><td>53</td><td>55</td><td>57</td><td>59</td></tr> </table>	Tarjeta 0						1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="6">Tarjeta 1</th></tr> <tr><td>2</td><td>3</td><td>6</td><td>7</td><td>10</td><td>11</td></tr> <tr><td>14</td><td>15</td><td>18</td><td>19</td><td>22</td><td>23</td></tr> <tr><td>26</td><td>27</td><td>30</td><td>31</td><td>34</td><td>35</td></tr> <tr><td>38</td><td>39</td><td>42</td><td>43</td><td>46</td><td>47</td></tr> <tr><td>50</td><td>51</td><td>54</td><td>55</td><td>58</td><td>59</td></tr> </table>	Tarjeta 1						2	3	6	7	10	11	14	15	18	19	22	23	26	27	30	31	34	35	38	39	42	43	46	47	50	51	54	55	58	59
Tarjeta 0																																																																									
1	3	5	7	9	11																																																																				
13	15	17	19	21	23																																																																				
25	27	29	31	33	35																																																																				
37	39	41	43	45	47																																																																				
49	51	53	55	57	59																																																																				
Tarjeta 1																																																																									
2	3	6	7	10	11																																																																				
14	15	18	19	22	23																																																																				
26	27	30	31	34	35																																																																				
38	39	42	43	46	47																																																																				
50	51	54	55	58	59																																																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="6">Tarjeta 2</th></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>12</td><td>13</td></tr> <tr><td>14</td><td>15</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>28</td><td>29</td><td>30</td><td>31</td><td>36</td><td>37</td></tr> <tr><td>38</td><td>39</td><td>44</td><td>45</td><td>46</td><td>47</td></tr> <tr><td>52</td><td>53</td><td>54</td><td>55</td><td>60</td><td></td></tr> </table>	Tarjeta 2						4	5	6	7	12	13	14	15	20	21	22	23	28	29	30	31	36	37	38	39	44	45	46	47	52	53	54	55	60		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="6">Tarjeta 3</th></tr> <tr><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td></tr> <tr><td>14</td><td>15</td><td>24</td><td>25</td><td>26</td><td>27</td></tr> <tr><td>28</td><td>29</td><td>30</td><td>31</td><td>40</td><td>41</td></tr> <tr><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td></tr> <tr><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td><td></td></tr> </table>	Tarjeta 3						8	9	10	11	12	13	14	15	24	25	26	27	28	29	30	31	40	41	42	43	44	45	46	47	56	57	58	59	60	
Tarjeta 2																																																																									
4	5	6	7	12	13																																																																				
14	15	20	21	22	23																																																																				
28	29	30	31	36	37																																																																				
38	39	44	45	46	47																																																																				
52	53	54	55	60																																																																					
Tarjeta 3																																																																									
8	9	10	11	12	13																																																																				
14	15	24	25	26	27																																																																				
28	29	30	31	40	41																																																																				
42	43	44	45	46	47																																																																				
56	57	58	59	60																																																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="6">Tarjeta 4</th></tr> <tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td></tr> <tr><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td></tr> <tr><td>28</td><td>29</td><td>30</td><td>31</td><td>48</td><td>49</td></tr> <tr><td>50</td><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td></tr> <tr><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td><td></td></tr> </table>	Tarjeta 4						16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	48	49	50	51	52	53	54	55	56	57	58	59	60		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="6">Tarjeta 5</th></tr> <tr><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td></tr> <tr><td>38</td><td>39</td><td>40</td><td>41</td><td>42</td><td>43</td></tr> <tr><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td></tr> <tr><td>50</td><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td></tr> <tr><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td><td></td></tr> </table>	Tarjeta 5						32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
Tarjeta 4																																																																									
16	17	18	19	20	21																																																																				
22	23	24	25	26	27																																																																				
28	29	30	31	48	49																																																																				
50	51	52	53	54	55																																																																				
56	57	58	59	60																																																																					
Tarjeta 5																																																																									
32	33	34	35	36	37																																																																				
38	39	40	41	42	43																																																																				
44	45	46	47	48	49																																																																				
50	51	52	53	54	55																																																																				
56	57	58	59	60																																																																					

A	B	C	D	E
2	16	1	8	4
3	17	3	9	5
6	18	5	10	6
7	19	7	11	7
10	20	9	12	12
11	21	11	13	13
14	22	13	14	14
15	23	15	15	15
18	24	17	24	20
19	25	19	25	21
22	26	21	26	22
23	27	23	27	23
26	28	25	28	28
27	29	27	29	29
30	30	29	30	30
31	31	31	31	31



¿Cómo construir las tarjetas adivinatorias?

Imagina que dispones para pesar únicamente 5 pesas de distintos tamaños:

PESAS	1 ^a	2 ^a	3 ^a	4 ^a	5 ^a
Tamaño(Kg)	1	2	4	8	16

Con ellas se puede pesar cualquier n° de kilos exacto desde 1 a 31 kg.

Completa las siguientes tablas indicando las pesas que necesitas para los distintos pesos.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	x		x		x											
2		x	x			x										
4				x	x	x										
8																
16																

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1															
2															
4															
8															
16															

A continuación ve construyendo las tarjetas adivinatoras. En este caso obtendrás 5 tarjetas. Si quieres construir 6 deberás incluir una sexta pesa de 32 kg y actuar igual. Para hacer la tarjeta 1 debes apuntar todos los pesos para los que se necesita la pesa de 1kg. Se actúa así de forma sucesiva hasta la tarjeta 5 en la que 2 debes apuntar todos los pesos para los que se necesita la pesa de 16 kg.

Tarjeta 1			
1	3	5	

Tarjeta 2			
2	3	6	

Tarjeta 3			
4	5	6	

Tarjeta 4			

Tarjeta 5			

Solución:

Tarjeta 1				Tarjeta 2				Tarjeta 3				Tarjeta 4				Tarjeta 5			
1	3	5	7	2	3	6	7	4	5	6	7	8	9	10	11	16	17	18	19
9	11	13	15	10	11	14	15	12	13	14	15	12	13	14	15	20	21	22	23
17	19	21	23	18	19	22	23	20	21	22	23	24	25	26	27	24	25	26	27
25	27	29	31	26	27	30	31	28	29	30	31	28	29	30	31	28	29	30	31

Nota: También se pueden construir utilizando los números en base 2.