

Table 1: Study attributes

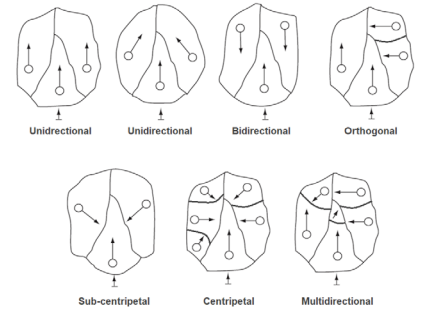
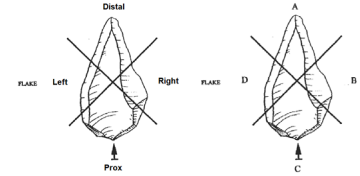
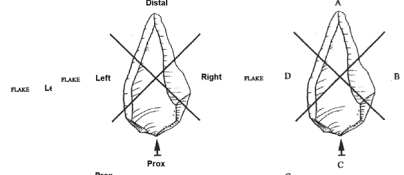
Code	Variable	Variable states	Definition or instruction	Data type	Measurement instrument	Measurement units	Precision	References	Provided illustrations
COMPLETENESS	Completeness	Complete, Proximal, Medial, Distal, Left, Right, Other, Indeterminate	Select whether complete or enter fragment type.	Categorical	None	None			
DAMAGE	Damage	Yes, No	Refers to potential edge damage incurred during transportation only.	Categorical	None	None			
DORSCORTEX	Dorsal cortex	None	None	Ratio	None	Percentages	Integer		
DORSAL_CORTEX_LOCATION	Dorsal cortex / natural surface location	All, Proximal, Mesial, Distal, left, Right, ProxLeft, ProxRight, DistalLeft, DistalRight, Other	Location of dorsal cortex, if it crosses these categories, select 'Other' and enter in location.	Categorical	None	None			
PLATFCORT	Platform cortex / natural surface	Complete, Partial, Absent, Indeterminate	None	Categorical	None	None			
DORS_SCAR_NB	Dorsal scar count	None	Count of flake dorsal scars ≥ 5 mm in maximum dimension.	Nominal Count	None	Counts			
DIR_DORS	Direction of dorsal scars	Unidirectional, Bidirectional, Sub-centripetal, Orthogonal/Perpendicular, Centripetal, either Uni-or-Bidirectional, Multidirectional, Unidirectional convergent, Other, Indeterminate	Direction of flake dorsal scars greater or equal to ≥ 5 mm in maximum dimension (Shea, 2013: Appendix 2).	Categorical	None	None		Shea, 2013	<p>Directionality of flake (Modified from Shea, 2013: Appendix 2) Please note that the second picture illustrates 'Unidirectional Convergent'</p> 
PROX-SCARS	Number of flake scars originating from the proximal sector	None	The sectors are defined on the dorsal face of the flake by two perpendicular lines offset from the axis of propagation by 45° (Crew, 1975:12; Tostevin, 2012:127).	Nominal Count	None	Counts	Integer	Crew, 1975; Tostevin, 2012	
LEFT-SCARS	Number of flake scars originating from the left sector	None	The sectors are defined on the dorsal face of the flake by two perpendicular lines offset from the axis of propagation by 45° (Crew, 1975:12; Tostevin, 2012:127).	Nominal Count	None	Counts	Integer	Crew, 1975; Tostevin, 2012	

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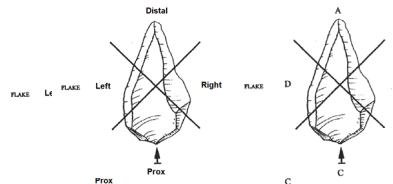
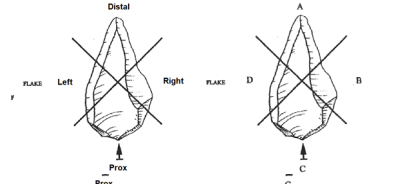
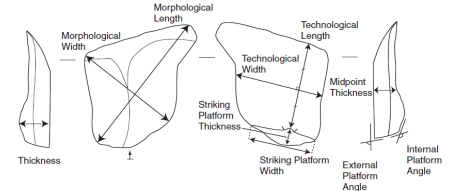
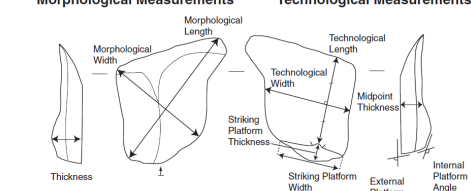
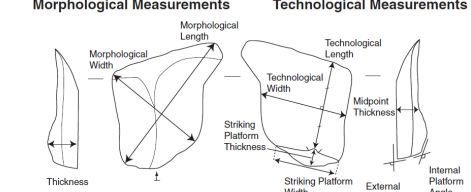
RIGHT-SCARS	Number of flake scars originating from the right sector	None	The sectors are defined on the dorsal face of the flake by two perpendicular lines offset from the axis of propagation by 45° (Crew, 1975:12; Tostevin, 2012:127).	Nominal Count	None	Counts	Integer	Crew, 1975; Tostevin, 2012	Directionality of flake dorsal surface defined using counts by sector. Sectors as in Crew (1975:12; also in Tostevin, 2012: 127). 
DIST-SCARS	Number of flake scars originating from the distal sector	None	The sectors are defined on the dorsal face of the flake by two perpendicular lines offset from the axis of propagation by 45° (Crew, 1975:12; Tostevin, 2012:127).	Nominal Count	None	Counts	Integer	Crew, 1975; Tostevin, 2012	Directionality of flake dorsal surface defined using counts by sector. Sectors as in Crew (1975:12; also in Tostevin, 2012: 127). 
MASS	Mass	None	The flake's weight.	Ratio	Scale	Grams	At least 1 decimal		
MAXDIM	Maximum dimension	None	The flake's maximum dimension is the measurement with the highest value that can be taken on the flake. Also referred to as "morphological length" (Shea, 2013: Appendix 2).	Ratio	Digital caliper	mm	At least 1 decimal	Shea, 2013	Various metrics directly compared (Shea, 2013) Morphological Measurements Technological Measurements 
MAXWIDTH	Maximum width	None	The flake's maximum width is the measurement with the highest value that can be taken perpendicularly to the axis of the maximum dimension. Also referred to as "morphological width" (Shea, 2013: Appendix 2).	Ratio	Digital caliper	mm	At least 1 decimal	Shea, 2013	Various metrics directly compared (Shea, 2013) Morphological Measurements Technological Measurements 
MAXTHICK	Maximum thickness	None	The flake's maximum thickness is the measurement with the highest value that can be taken perpendicularly to the axis of the maximum dimension and the maximum width. Also referred to as "morphological thickness" (Shea, 2013: Appendix 2).	Ratio	Digital caliper	mm	At least 1 decimal	Shea, 2013	Various metrics directly compared (Shea, 2013) Morphological Measurements Technological Measurements 

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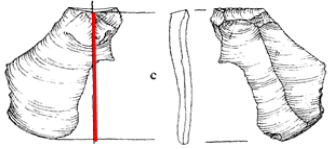
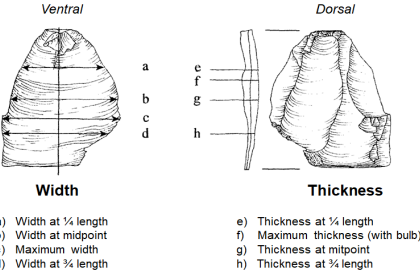
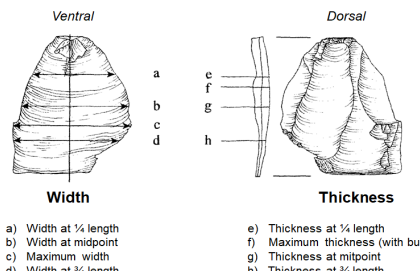
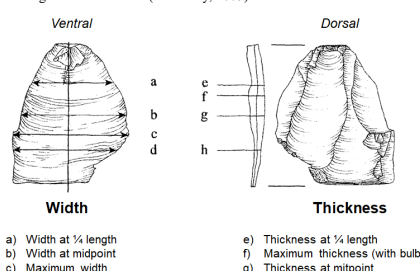
TECHL	Technological length	None	Measured as the maximum distance from the top of the striking platform (percussion point or center of platform if not visible) to the distal end of the piece along a line perpendicular to the striking platform width (Andrefsky, 2005: fig. 5.8c). Also referred to as "debitage length" (Tostevin, 2012).	Ratio	Digital caliper	mm	At least 1 decimal	Debenath & Dibble, 1994; Andrefsky, 2005; Tostevin, 2012; Shea, 2013	Technological length (Andrefsky, 2005: fig. 5.8c) 
TECHMAXWIDTH	Maximum technological width	None	Measured as the maximum distance between the two edges of the flake perpendicular to technological length (Andrefsky, 2005: fig. 5.9c).	Ratio	Digital caliper	mm	At least 1 decimal	Debenath & Dibble, 1994; Andrefsky, 2005	Technological measurements (Andrefsky, 2005) 
TECHMAXTHICK	Maximum technological thickness	None	Measured as the maximum distance from ventral to dorsal surface, including the bulb (Andrefsky, 2005: fig. 5.9f).	Ratio	Digital caliper	mm	At least 1 decimal	Andrefsky, 2005	Technological measurements (Andrefsky, 2005) 
TECHWIDTHPROX	Proximal technological width	None	Measured as the maximum distance between the two edges of the flake perpendicular to technological length at 25% of technological length (Andrefsky, 2005: fig. 5.9d).	Ratio	Digital caliper	mm	At least 1 decimal	Andrefsky, 2005	Technological measurements (Andrefsky, 2005) 

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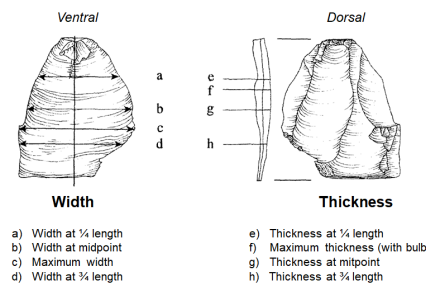
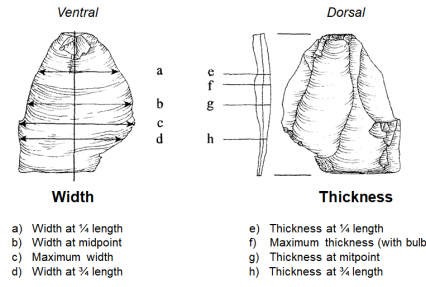
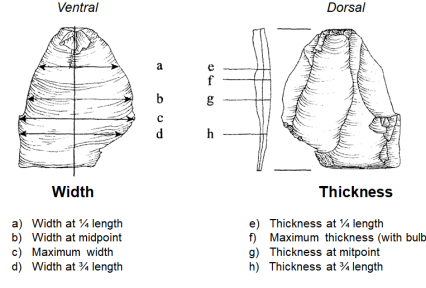
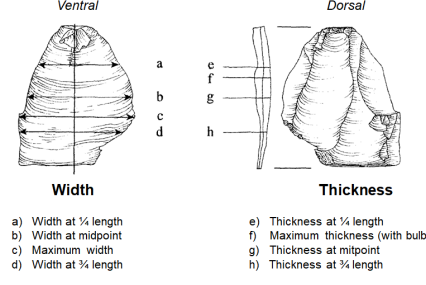
TECHWIDTHMES	Mesial technological width	None	Measured as the maximum distance between the two edges of the flake perpendicular to technological length at midpoint (50%) of technological length (Andrefsky, 2005: fig. 5.9d). Also referred to as “debitage width” (Tostevin, 2012) or “technological/midpoint width” (Shea, 2013).	Ratio	Digital caliper	mm	At least 1 decimal	Andrefsky, 2005; Tostevin, 2012; Shea, 2013	<p>Technological measurements (Andrefsky, 2005)</p>  <p>Width</p> <p>a) Width at ¼ length b) Width at midpoint c) Maximum width d) Width at ¾ length</p> <p>Thickness</p> <p>e) Thickness at ¼ length f) Maximum thickness (with bulb) g) Thickness at midpoint h) Thickness at ¾ length</p>
TECHWIDTHDIST	Distal technological width	None	Measured as the maximum distance between the two edges of the flake perpendicular to technological length at 75% of technological length (Andrefsky, 2005: fig. 5.9d).	Ratio	Digital caliper	mm	At least 1 decimal	Andrefsky, 2005	<p>Technological measurements (Andrefsky, 2005)</p>  <p>Width</p> <p>a) Width at ¼ length b) Width at midpoint c) Maximum width d) Width at ¾ length</p> <p>Thickness</p> <p>e) Thickness at ¼ length f) Maximum thickness (with bulb) g) Thickness at midpoint h) Thickness at ¾ length</p>
TECHTHICKPROX	Proximal technological thickness	None	Measurement taken at right angle to technological maximal width as the maximum distance from ventral to dorsal surface at 25% of technological length (Andrefsky 2005: fig. 5.9h).	Ratio	Digital caliper	mm	At least 1 decimal	Andrefsky, 2005	<p>Technological measurements (Andrefsky, 2005)</p>  <p>Width</p> <p>a) Width at ¼ length b) Width at midpoint c) Maximum width d) Width at ¾ length</p> <p>Thickness</p> <p>e) Thickness at ¼ length f) Maximum thickness (with bulb) g) Thickness at midpoint h) Thickness at ¾ length</p>
TECHTHICKMES	Mesial technological thickness	None	Measurement taken at right angle to technological maximal width as the maximum distance from ventral to dorsal surface at midpoint (50%) of technological length (Andrefsky, 2005: fig. 5.9h).	Ratio	Digital caliper	mm	At least 1 decimal	Andrefsky, 2005	<p>Technological measurements (Andrefsky, 2005)</p>  <p>Width</p> <p>a) Width at ¼ length b) Width at midpoint c) Maximum width d) Width at ¾ length</p> <p>Thickness</p> <p>e) Thickness at ¼ length f) Maximum thickness (with bulb) g) Thickness at midpoint h) Thickness at ¾ length</p>

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TECHTHICKDIST	Distal technological thickness	None	Measurement taken at right angle to maximum technological width as the maximum distance from ventral to dorsal surface at 75% of technological length (Andrefsky, 2005: fig. 5.9h).	Ratio	Digital caliper	mm	At least 1 decimal	Andrefsky, 2005	<p>Technological measurements (Andrefsky, 2005)</p> <p>Width</p> <p>a) Width at ¼ length b) Width at midpoint c) Maximum width d) Width at ¾ length</p> <p>Thickness</p> <p>e) Thickness at ¼ length f) Maximum thickness (with bulb) g) Thickness at midpoint h) Thickness at ¾ length</p>
PLATFWIDTH	Platform width	None	Maximum width of platform perpendicular to technological length (percussion axis), measured from one lateral margin of the platform to the other (Andrefsky, 2005: fig. 5.5; Debénath & Dibble, 1994: fig. 2.15). Extent of platform on débordant flakes is determined by the first clear change in angles in plane view in the facet / débordant side after the point of percussion.	Ratio	Digital caliper	mm	At least 1 decimal	Debénath & Dibble, 1994; Andrefsky, 2005	<p>Platform width and thickness (Holdaway & Stern 2004, Fig. 3.16.1)</p> <p>ventral surface percussion axis right lateral margin left lateral margin platform width maximum thickness thickness through umbo and in line with percussion axis</p>
PLATFTHICKIMPACT	Platform thickness at point of percussion	None	Distance of interior to exterior margin of the platform at the point of percussion, taken perpendicular to platform width and parallel to the surface of the platform (Debénath & Dibble, 1994: fig. 2.15). Also “Platform Thickness” (Tostevin, 2012:126). When point of impact is not visible, fill with NA.	Ratio	Digital caliper	mm	At least 1 decimal	Debénath & Dibble, 1994; Tostevin, 2012	<p>Platform width and thickness (Holdaway & Stern 2004, Fig. 3.16.1)</p> <p>ventral surface percussion axis right lateral margin left lateral margin platform width maximum thickness thickness through umbo and in line with percussion axis</p>
PLATFTHICKMID	Platform thickness at midpoint	None	Thickness of platform at midpoint of platform width, taken perpendicular to platform width.	Ratio	Digital caliper	mm	At least 1 decimal		<p>Platform width and thickness (Holdaway & Stern 2004, Fig. 3.16.1)</p> <p>ventral surface percussion axis right lateral margin left lateral margin platform width maximum thickness thickness through umbo and in line with percussion axis</p>
PLATFTHICKMAX	Maximum platform thickness	None	Maximum thickness of platform, taken perpendicular to platform width.	Ratio	Digital caliper	mm	At least 1 decimal		<p>Platform width and thickness (Holdaway & Stern 2004, Fig. 3.16.1)</p> <p>ventral surface percussion axis right lateral margin left lateral margin platform width maximum thickness thickness through umbo and in line with percussion axis</p>

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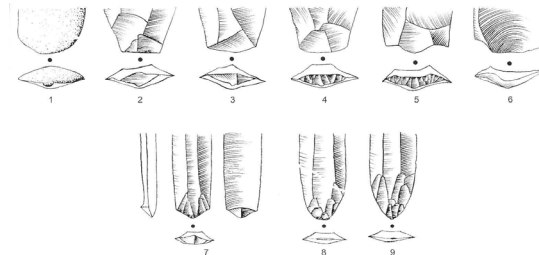
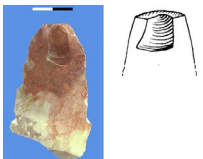
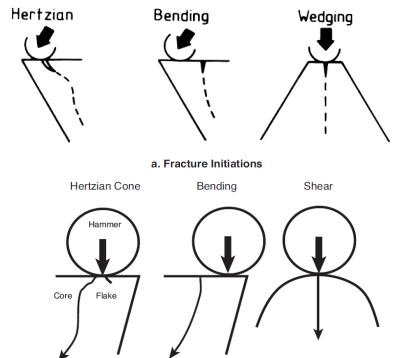
EDGEPLAT/EPA	External Platform Angle	None	Measures the edge angle perpendicular to point of impact. Taken opposite point of impact so that meeting point of dorsal and platform sits against the fixed additional horizontal bar on caliper, with the caliper jaws resting on platform and dorsal surfaces. Flake should be angled so that meeting point of dorsal/platform sits in the centre, with the surfaces arranged symmetrically about the meeting point to measure the base of an isosceles triangle.	Ratio	Amended caliper (Dibble & Bernard, 1980)	mm	At least 1 decimal	Dibble & Bernard, 1980	Measure edge angle perpendicular to point of impact with amended caliper (Dibble & Bernard, 1980) 
PLATFMORPH	Platform morphology	Punctiform, Plain, Linear, Facetted, Crushed, Cortical, Dihedral, Chapeau de Gendarme, Other, Indeterminate	Morphology of the flake platform (Tixier, 1981; Debénath & Dibble, 1994: figs. 2.4-2.11).	Categorical	None	None		Inizan et al., 1995, 1999	Platform morphologies (Inizan et al., 1995, 1999) 
PLATFLIPP	Platform lipp	Yes, No, Indeterminate	Absence or presence of a small overhang at the proximal ventral part of the flake right below the platform.	Categorical	Fingernail method for identification	None			
BULB	Bulb	Yes, No, Indeterminate	Absence or presence of a bulbar prominence at the proximal ventral part of the flake.	Categorical	None	None			
SHATTBULB	Shattered bulb	Yes, No, Indeterminate	Absence or presence of a shattered bulb at the proximal ventral part of the flake, the scar of the shattered bulb initiates from the platform (Holdaway & Stern, 2004).	Categorical	None	None		Holdaway & Stern, 2004	Shattered bulb (Holdaway & Stern, 2004) 
INITIATION	Initiation	Hertzian, Wedging, Bending	Assessment of the overall initiation process that created the flake (Shea 2013: fig. 2.1; Cotterell & Kamminga, 1987: fig 4). In conchoidal flaking, initiation is by the formation of a partial Hertzian cone crack around the contact zone between the flaking tool and the initiation surface on the nucleus. Flakes can also be initiated by a wedging action directly under the applied load, a mechanism that is common in bipolar flaking. The third mode is initiation under bending stresses away from the point of force application (Cotterell & Kamminga, 1987: 685).	Categorical	None	None		Cotterell & Kamminga, 1987; Shea, 2013	Initiation (Top: Cotterell & Kamminga, 1987: fig. 4; Bottom: Shea 2013: fig. 2.1) INITIATION 

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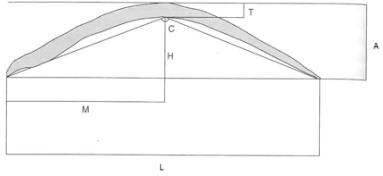
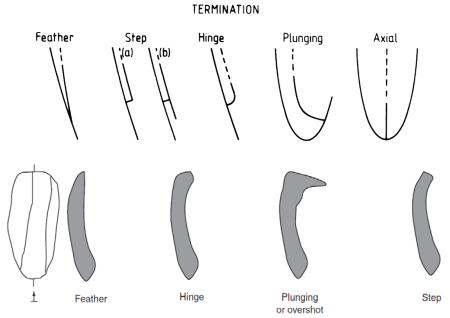
VENTR-PLANE-FORM	Ventral plane form (curvature)	Flat, Concave, Very concave, Bulbar, Twisted	Flat: platform, bulb, ventral midpoint and termination are all largely in contact with the plane; Concave: platform, bulb and termination in contact with the plane but ventral midpoint is not; Very concave: platform, bulb and termination in contact with the plane but ventral midpoint distance from plane exceeds midpoint flake thickness; Bulbar: bulb thickness results in only the bulb and termination contacting the plane; Twisted: lateral profile is twisted in such a way as to prevent meaningful assessment of the ventral plane form.	Categorical	None	None			
ANGLE-HEIGHT	Angle height	None	Measured angle height is used to calculate curvature in conjunction with other measures taken. The flake is laid in profile view against floor of provided box, and ruled background is used to determine the measure for H taken at midpoint of flake (H; see illustration in Andrefsky, 2005: fig. 5.14).	Continuous	Measuring box	mm		Andrefsky, 2005	<p>Angle height and curvature/profile shape (Andrefsky, 2005: 110)</p> <p>Curvature is calculated as: $c = 2(90 - a)$ where: $a = \tan^{-1} H/M$ $M = L/2$ $H = A - T$</p> 
SECTION	Cross-section shape	Triangular, Trapezoidal, Right Triangular, Domed, Lenticular, Indeterminate	Cross-section shape taken at the mid-point of technological length of the flake (Tostevin, 2012: 134-135 also for description of attribute states).	Categorical	None	None		Tostevin, 2012	
LATEGETYPE	Lateral Edge Type	Parallel, Convergent, Divergent, Ovoid, Diamond, Square, Amorphous	Dominant shape of the two lateral edges to one another (Tostevin, 2012: 133, also for description of attribute states).	Categorical	None	None		Tostevin, 2012	
FLAKE/TERM	Flake termination	Hinge, Feather, Overshot, Axial, Crushed, Indeterminate	Shape of the distal ending of the flake (Cotterell & Kamminga, 1987: fig. 4; Shea, 2013: fig. A2.4.); trajectory of the ventral surface at the distal end of the flake.	Categorical	None	None		Cotterell & Kamminga, 1987; Shea, 2013	<p>Flake termination (Top: Cotterell & Kamminga, 1987: fig. 4; Bottom: Shea, 2013: fig. A2.4.)</p> 
DISTPLANFORM	Distal Plan Form	Flat, Pointed, Rounded, Irregular	Distal termination shape in plan view; distal approximately the last 25% of the flake.	Categorical	None	None			
DISTPROFANGLE	Distal Profile Angle	0-30°, 31-60°, >60°	Measure at the distal-most end of the flake (opposite the platform: see Tostevin, 2012: 136-137).	Categorical	Goniometer	Degrees		Tostevin, 2012	
KOMBEWA	Kombewa	Yes, No, Indeterminate	Does the flake show two ventral surfaces?	Categorical	None	None			

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FLK-TYPE	Flake type	<i>e.g.</i> : Levallois flake, Levallois point, Levallois débordant, Dejeté flake, Core management flake/core trimming element, Core tablet, Bifacial thinning flake, Retouch flake, Burin spall, First flake, Notching flake, Bladelet, Crested blade, Tranchet flake, Indeterminate, etc.	Does the flake belong to a particular kind of flakes (i.e. diagnostic pieces)?	Categorical	None	None			
RED-SYST	Reduction system	<i>e.g.</i> : Levallois (other than Nubian), Nubian, Discoid, Laminar, Quina, Bifacial shaping, Bipolar, Other (informal), Indeterminate, etc.	Can the flake be identified to belong to a particular reduction system?	Categorical	None	None			
FLK-FORM	General shape of the flake	<i>e.g.</i> : Flake, Convergent flake, Elongated flake, etc.	Flake: no specific dimensions or shape; does not belong to any of the other categories; Convergent flake / point: a flake with an overall convergent shape; Ratio of length to width <2; Elongated flake with parallel edges: ratio of length to width ≥2, width is ≥ 10 mm.	Categorical	None	None			
REMARK	Remarks			Free text	None	None			